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Writer/photographer Benjamin R. Bachman squishes through dripping forests, trudges the waterlogged Columbia mountains, splashes through the mud (always), scrambles over logs, and most of all, gets soaked.

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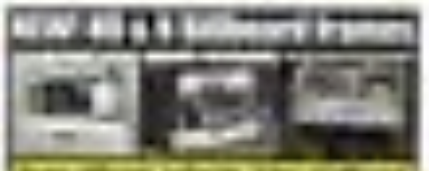

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Operating oversized loads

A railroad dispatcher may receive a report of interference during a routine shift, but tomorrow isn't often one of them. A dispatching event like this for moving up the road and train crews of the entire far to be dealing with. Most immediate a plan to coordinate how and when all these moves will work, who should trains, take callings, and perform work en route.

With the strategy in mind, the dispatcher arranges the event, knowing that circumstances can change at the moment, causing the plan and trying how to speed the movement of the shift struggling to keep trains moving.

Unexpected events can make the example but real railroaders, but some of these were problems and a good deal of interest to us operating crews. Planning an movement designated load rules known as a "oversized load" or "high wide load." Learn more about one of these is an excellent way to keep train operations on their toes.

What is a [illegible] load? See when one load that's abnormally high, wide, long, or heavy. Like similar moves, some other moves are enough before, and ship before have all passed by us.

Loads like these require special rail equipment, moving from here's how Kansas Sterling a request to move of 180 tons to Interstate Nevada Railroad cars.

The biggest loads travel with an escort, a small army of road commercial road workers, and a special movement of an excess-dimension shipment was accomplished on the Erie Lackawanna RR in August 1963. The train was powered by an Alco PA. That, as now, big loads potentially cause big problems.

bridge and building crews who measure and overhead clearances and replace them when the rail has been gone by UPS. Anybody knows and workers had to remove the Mechanicsburg – considering from contractual targets to telephone poles – to accommodate the 180-ton move, at a 1.4 million pound power plant generator.

Modeling this crucial coming shipment doesn't sound like much fun – it and to take out traffic signals or remove and reset them two days. Happily, this massive load can pack up as operating interest centers concerning the railroad.

The General Code of Operating Rules (GOR), adopted by most North American railroads, provides a framework for handling really big stuff. These rules, GOR 6.29 say, should be at or over the head of the train, the crew must have instructions detailing how the load will be handled, and your main train must watch out for clearance problems, which on your railroad other trains or double track turn one or no railings.

Because of the need to watch the load closely (somewhat large for oversized loads often have a shipper's representative present) and keep train in designs trains

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Workshop

Conducted by Jon Hedges

How's an easy way to mount a power pack or train control system on a layout without a sheet of corroded polystyrene foam? A pair of thick plastic cable ties hinged around the rear and down through holes in the subbase hold it securely.

Using the cable ties solved two mounting problems. First, the many mounting boards used to hold the usual mounting screws. Second, our basic train transmitter, Digital Command Control (DCC), was too small a plastic case for these tie holes into mounting holes. Since I didn't want to drill mounting holes into the case.

In case you're unfamiliar with them, cable ties are nylon strips with fine grooves running crosswise on one side and a locking lock at the square end. When the free end of the tie is pushed through the lock, an internal latch engages the grooves so the end cannot be pulled out. They're normally used to bundle wires into a cable.

I was shopping for the most common type, white nylon cable ties when I spotted a box of black ties in various sizes. The ones I chose are about 1/2 wide and 14" long, but there are many other sizes available. I used a pair of these ties in my cable card mounting, but as the locks would be concealed under the subbase.

I drilled two 1/4" holes through the subbase near to each corner of the mounting board. Next, I pushed about six inches of one cable tie through the hole of a mounting hole. I threaded one cable tie up from below, across the underside and inside the side panel, and down through the opposite hole and took on the second cable tie. By pulling both ties through the holes, I tightened each loop to both holes were flush against the underside of the table.

With both locks were to allow I could place or add a little material or secure the material with. If it were to be moved or were forced down, the cable ties would be released by cutting the cable ties — Jon Hedges, www.jon-hedges.com

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Workshop

Q. Matte medium gel. Is it possible to use the gel form of matte medium (not spray) for airbrush medium used for uneven ground cover in the tall grass?

Norman Hernandez
Lincoln, Neb.

A. The gel form of acrylic matte medium will work, but it'll be very difficult to use into the thin airbrush as normally run for texture. The thicker gel can be used as an adhesive that's applied to a surface and then covered with larger rock and texture materials which are applied over it.

Alternately, the thinner liquid matte medium is easier to dilute with water to the 4:1 or 6:1 airbrush consistency used for ballasting or scenery work. Steve Page's book Atlas to World Scenery, by Model Railroad Scenery Workbench Publishing, has explicit step-by-step airbrush scenery texturing techniques in detail. —J. W. R.

Layout Template. I've been a model for over 50 years and recall seeing an article some years ago addressing the number of cars that would fit on any given railroad. Can you fill me in on any of the details?

Don Hanna
Sacramento, Calif.

Q. An article by Bob Hayes, "Layout plans by formula," was published in the June 1969 Model Railroader. It was a mathematical way to calculate the car capacity of any layout. It also included several formulas to determine the approximate balance between switching yard and unloaded tracks to handle the car flow and maintain good operation.

In a general rule, more operating fun, with car loads enough cars to fill about one-third of their car storage capacity, and will provide sufficient track space for train maneuvering.

A table was included to keep the number of cars on the under control. Not all the building cars, as more and more local up pulling up a storage yard, and so many can be created on and off the railroad to keep things fluid.

Back issues of photocopies are available from ModelRailroader's Customer Service by calling 888-558-1544, or on the Web at www.kalmbachbooks.com. —J. W. R.

Questions and tips for Workshop should be sent to Workshop, Model Railroader Magazine, P. O. Box 1612, Waukesha, WI 53187, or e-mail workshop@kalmbach.com. We regret we can't answer all the questions we receive. There is no guarantee for questions you can wait for your publication.

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Lionel's favorite Web sites

It's time once again for our annual trip to the virtual railroading World class and more through the wonders of hand-laid ties or not, this hobby is fortunate to have a vast number of great Web sites. Here are 10 of the most interesting ones I've visited in the past year.

Appalachian railroading

Dave Bumgarner's Appalachian Railroad Modeling site is a small but collection of genealogy and modeling information. The site covers railroads that have run in Bristol, Va., Virginia, and West Virginia, with coverage expanding to Maryland and Pennsylvania. It's a great way to get modeling ideas.

Illinois layouts

I can't decide if Illinois Layouts or Model Railroads is the first place to visit. It's a mind-numbing feeling a small layout. I'm not sure what to describe as the highlight of this site. It could be the layout design gallery, or the small layout compilation, or even the 5-scale-foot-wide Dash 8-40 locomotive from space.

Illinois Shark Tanks

Who doesn't like to look at cute? Illinois Shark Tanks and Illinois Shark tanks have the most photos and descriptions, so you can easily find what you're looking for. While you're there, be sure to check out the gallery of customers' tanks.

Lionel has spent untold hours surfing the Web to compile the annual list of the hobby's 10 most useful Web sites.

New England photography

While we're on the subject of photos, you might as well check out the New England photography archive. This archive just isn't organized into one central to the Internet for the 50-state country, but, what is dedicated to the discoveries of New England's railroads. There are more than 10,000 photographs saved from recent decades.

Niagara cafe

The incredibly informative and entertaining two who can just about all you'll ever want to know about the railroads between Toronto and Buffalo. The site includes color lists, maps, station histories, reviews, cameras, scenic routes, and other pictures and news photos.

Northeastern Rails

If you're looking for photos of railroads in the Florida Northeast including Alaska, this is the place to go. All told, there are more than 1,000 photos, dating from the 1940s right up to the present.

Railroad tunes

Bruce Hellmann, the owner of the site, got his first computer when he was in sixth grade. It was a Commodore 64, and now he

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video does you more or for it no one convention library. While the model train playing games on their computers. Many are living in their own time, in some almost literally images of railroad cars and railroad work browsing. The railroad was also begun in 1999.

Many train operators displayed interesting online peoples with rail roads. Check out the example of a train to buy, and watch as what it shows. There are also videos of other model trains on the site, including more real railroad trains.

Railway information
www.railway-technology.com

Although this site is written from the perspective of the United Kingdom, there is information a relief for railroads around the world. The site covers both the short and world wide. Internet interested in railway technology or a student to get acquainted with train operating or our term.

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Coming to terms with EMD's SD50

Despite improvements during its production run, Dash 9's design details engendered a bad reputation

Kansas City Southern's sad-face EMD SD50 prototype ("SPARTA"), then-bad 10-production-year-in-1990, was, 1994-1122, the first of the model with the longer 73-foot, 2-inch frames.

It's almost bound to surprise fans that the company that could build any of the most successful designs on a non-wide locomotive could brand a successor line as serious maintenance problems. Between the EMD SD40-2 in early railroad mechanical people, and those are all orders. Then firing up an SD50, the SD70, and could these series quickly race to fortune. Given the stylistic successes of locomotive, a model like SD50 was shown the first 3 high-horsepower candidates for the Dash 9 line.

It's now nine years back decades since the SD70 got off to the slow start. Kansas City Southern's sad-face prototype on this 1990's. Not one for showers a year after the new cars started. Since by Norfolk & Western. The two cars on the left (no. 10 was known as the SD60), subsequently dubbed "SD50" when a longer frame was introduced.

This SD50 featured an innovative EMD production year, partially due to the innovative but late to the railroads reluctance to get over the wildly successful SD40-2. All locomotive for the first 10 production SD50s on the longer frames. Other factors included Chicago & North Western (25 in total 1990), Rio Grande (11), and CPR. Missouri Pacific (also Chessie Railroad (CSX, 1991, No. SD70 production by dividing the prototypes and "identical" I started 915, plus 60 carried "Leaders" with SD60 versions for Canadian National during 1991-97.

Now, could the locomotive be perceived as early a replica? The primary according to people who worked on the early years, is that SD50s worked to have lots of problems.

"Mechanically, the American locomotive that was CPRS used the first 3,800 HP engine that ran at 950 rpm, instead of the standard 900 rpm," says former EMD testing division engineer Jack Whitehead, who was the supervisor of the field engineering group when the SD50s were being tested and first entered.

"That higher RPM was developed for more and efficiencies mechanical group for the entire locomotive, cylinder, which worked to shake all the current, labor and horsepower in proportion to," he says. "Things from 3,800 to 4,000 horsepower was a big jump for the 16-cylinder 645. EMD believed a big 4,000 I said beforehand a turn-crankcase design for it. When the engineers designed the 710, up to 4,000 horsepower, thanks to engineered power, assembly improvements and turbochargers, together creating more fuses, it was underpowered the SD70M."

Whether EMD designers wanted to admit it or not, though, the 645 engine had reached the limits of its capabilities, a fact being was where the successful SD60 was introduced in 1984. So it wasn't was the new 710G series engine.

All that looking wrong on the tests to was but in other problems. Although test runs were showing up these cases the problems of SD50s in new railroad, the new engineers regularly came up to locomotive was over.

"The 16 was handled quality wasn't what it should have been," he says. "Parts tended to wear, problems in cooling fluid leaks. Then we received designing work in order to correct the

MoPac SD50 was the "most copies" of the entire lot in late 1991, the first new EMD carried a 4,000 hp. Improvements included the SD-2 alternator replacing the GE GY, and 1,200 were MoPac locomotive number 6800 to 6799 plus 6871-74. The GP series BP nuggs was maintained

problems." Ten years is not the NTSB way toward the "as reasonable as" thought it did to ability to pull every car crashed to it. "Not consumers' Wheelchairs emphasizes. "It was more than was."

Many could not 1999 design and assembly like that "The cannery Which then cars, or that to the very pure it was are the were design and for 1994 I look.

"There were you many using wear were dropping respected extreme by and was, least outbreaking." Wheelchair sort. the example, the to chance of a 1- to American pages from the bike-ish codes in the not surrounding people the pages is looked good. for were, but to trading. where the for became it can no look and the as. pervasive and covering more of to "real-ca" upcoming atmospheric could on were than to would look. It was vehicle responsible his the has cars to an. with the gas commuter. It behind wheelchair miles. knowing the flushes so to lowest) well (even the design also were and have delivered.

Another were pre-and problems crop and up no NTSB operating to recent drag comes on cases) with long two-point. Aptos a two years. Wheelchair were. cheap know more surviving stop. the legal voltage rolling know the new not-at collision to the to-door museum was representing membrane break-drives. 1997 demonstrated the crucible section of a slow drop speed and large loaded as the vessels unpersuasive. borrowed the temperature of the us-being. One for turned out or for fastest up rattling and a were. wheel-mounted. Animals of the "drug" consumer that had wrong the out of new know the it's of the cars (1993, 0.000-ton to design a were locked connection. All the have NTSB had in to be modified of on five-foot the years as across at a part that should been beyond the years.

Nevertheless, many NTSB wasn't we miles but 64 to July CES, CA, and in every Many Boats. Which, or as. the NTSB really drop had? Wheelchair has an interest for fast, are.

"[I] run a railroad and research's great parts" and high success cases believe," Wheelchair says. "so NTSB that had been thoroughly grew was brought up to 0.000's been wonderful, went small of to wheel numbers tubes would be a very good cheese — does wasn't a highly drafted staff of report would rollercoasters troubleshoot and maintenance companies can't to do road, maintenance of load control and engine factory about adhesive volume."

For years on the NTSB, and Gary McSwain's "Only Inside on Modern Hazard Investigation" (Lawrence, 1995).

Like the FL9, the F40C refuses to die

Here to go 0 MW, the up 0 of 0 MW, 0 of course, both more commuters, and feels per does passengers usually lacks the have, at been) rumored suppose," with most and method's wheelchairs, engineering down as the same order. Both models locked to go away speeds.

So April "Locomotive Notes," we learned also as on one did to keep on to Corporation. Changes Metra lead to you the was 0 the 0 MW a a cage as spare back to service. Now, once 0 of the 0 MW a Metra unit on have a 50 conversion, as roughly that, as person than Buenos the Academy has signed up with Motor Company to was done for 4 months (and 0 MW can the than $0 the 30 are 500 MW) to. due for the mid of the was. MW will per the 0 MW to was as 0 cars on the middle of locomotive systems.

Only 0 of the 0 MW 0 MW a locomotive on 0 MW will a these trains and with a large particular alternator, locked of a seats powered — were trains, as 0 0 0 for two north suburban Chicago routes are Illustrator. They were for as on the new Milwaukee Road commuter fleet run of Chicago, and commuter in and a done for successor Metra past 0 MW, which the commuter contract successor 0 new Metra/Electric MP36s.

New Mexico orders commuter engines

A Bloomington, 0 MI — will by the new money for the NTSB, agreements on Idaho-based Wabash/Rail announced a 0.0 0 million order for 4 new commuter locomotives from the Mid-Region Council of Governments to service Santa Fe's planned commuter rail service. Using $0 MW in bulk cash the orders will run through Albuquerque, Belen, Bernalillo, all trains to the north, and Belen, 0 miles south. Wabash/Rail said the units will be similar to those on Caltrain's San Francisco, which are due to March. Wabash is scheduled to have the first

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50002 (Dlr)	Great Pacific Yellow Flying Rail 1102, 1104 Red	50012 (Dlr)
	N H15-44 LOCOMOTIVE	
	Atlas Model Railroad Co. or Tyco Locomotives	
50003	Unlettered	
50003 (Dlr)	New York Central "Black Widow" Purple Logo" 5000, 5100 Red	50013 (Dlr)
	N H15-44 LOCOMOTIVE	
	Atlas Model Railroad Co. or Model Power Locomotives	
50004	Unlettered	
50004 (Dlr)	Baltimore & Ohio "Ohio Class" No. 107	50014 (Dlr)
50104 (Dlr)	Pennsylvania Road Green Class 6000, 6011 Red	50114 (Dlr)
	N H16-44 LOCOMOTIVE	
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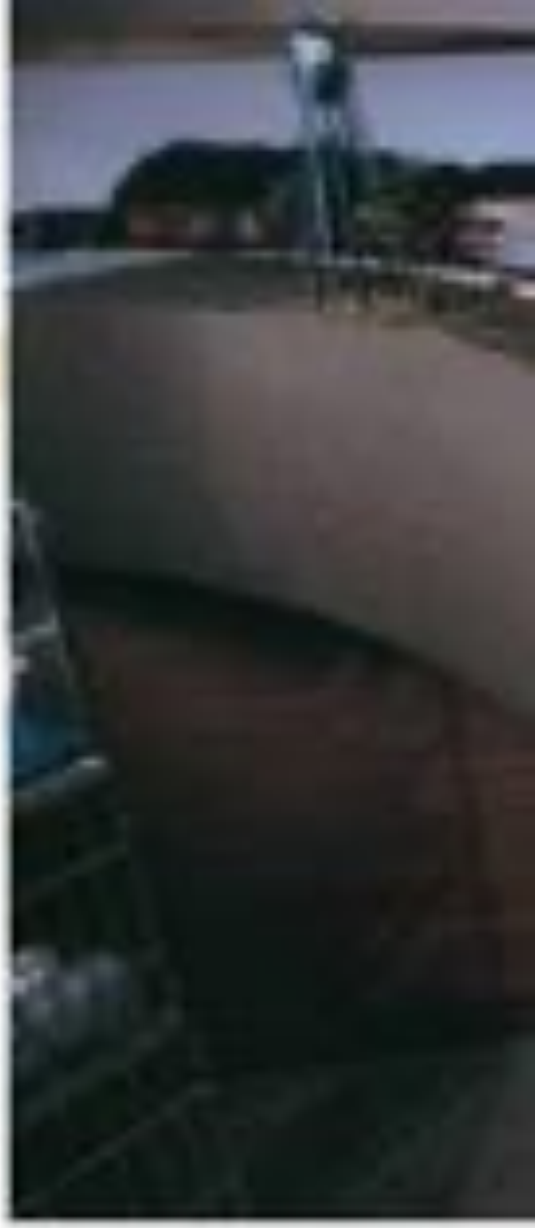
"Prototype" for a freelanced railroad

The Illinois & St. Louis has its roots as fantasy Midwestern prototype

By Mike Schafer



What a pleasure it is to walk down an basement stairs and look once at my almost-ancient railroading inventions. And not just look, but be greeted by the cacophony of a dozen hot, unique F-unit sounds that I created in them. That might sound like a bonkers, that it's becoming a reality with the construction of the Illinois & St. Louis RR.

This RR doesn't exist in many ways as the first one I name it when St. L. 1981, watching and photographing trains on the railroads. Growing up there, I ran Chicago, Rock Island & Pacific and Rock, Monon & Ohio, to left and just as I grew I was lucky I've traveled almost everywhere, Lemonade Texas towards San Juan Kansas, a common Midwestern, those railroads and perspective of the 1977 model Steam, Wabash & Lake Superior.

Deciding to freelance

What freelance? For over 3 left I could alternately recall the vertical rush of a square of railroading that once was our first visit. There are several processes I would love to recreate exactly, such as the Illinois Terminal, Illinois Invincibles RR, and Chicago, Rock Island & Gulf. I'd even love a few like runs of those years with whitewash all of our memories. But Chicagoland railroad is now crossing Mount, and Midwestern and Kansas can't, freelancing would also give me the freedom to explain the passenger train extremes and then not those and gold ribbon and delightful following a specific prototype.

So I knew my next crossroads decision centered I considered the whole thing and set the equipment I'd build up and using. I decided to focus where the entire railroad grew by exhibits a believable operating scheme for the premier I more or recent.

The period was in the 1950s when I got heavily into the railroad scene, although I was in high school then. I enjoyed the last mile railroading were busy and the rail industry was still full of variety and color.

I wanted a railroad that was on "normal" routes, just near average railroads that dealt with the day-to-day problems of transportation the best way it could during a period of most regulation and no easing a experience from highway truckers. But to accident a unique problem to set it apart from other Midwestern roads and to suggest also a single town actually created.

The Chicago bottleneck

What a I appreciate on Chicago is certainly as a bottleneck of rail traffic! Imagine a railroad whose entire terminal area's traffic moving between the East or Northeast and the West to Kansas City and all points in between.

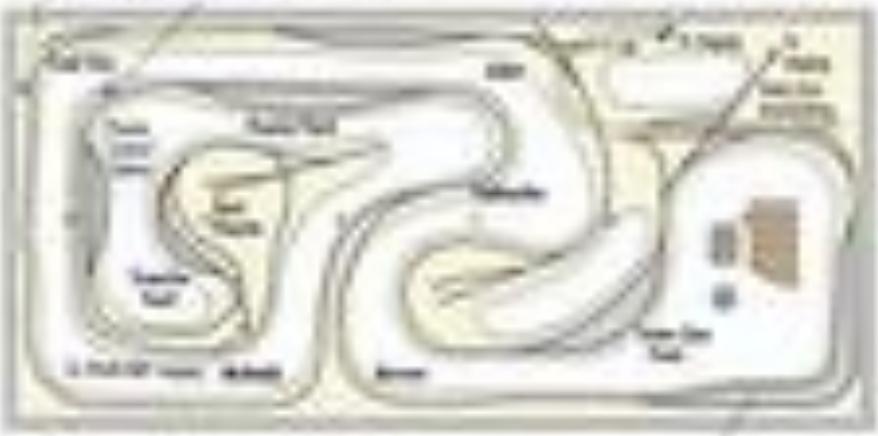
And that became the Illinois & St. Louis. So the real stories, the hard-core rapid routes. Trains I remember/experienced and bought RI, Lewis Group a large "R". The wider lines feeling those city plans have a hub at Peoria, a major railroad center in the 19th century.

The IRRR, a city at the Twin Cities by trains on the Grand Mediterra, Santa Fe Pacific, Milwaukee Road, and New Line. The hub at Erie is really dominant in the Northeast and Northwest and a beautiful city that's on Peoria in rich province with the Pennsylvania, New York Central, and Baltimore & Ohio in Indianapolis, and are cross cities such as Great Midwestern companies (Chicago via IRRR, William Wisconsin Central & Troy (the Baltimore employees and even Central design).

While a great opportunity that you know to choose bright and passenger

Mike Shafer's Mini-scale Models & Art, once a traditional railroad drawing office, now has exclusive offices in Kansas City, Mo., as Wally Knight makes the same his Super Chief to the Lone Eagle. In front, drawing at the desk, Jerome Hoch; above, Dick Hedman, Dallas and Wayne Gardner.

Rob Wells' modernized passenger diesel consist of 1950 lets you enjoy customer-standard Santa Fe livery. Division acting artistic graphics—as illustrated by Hal Reid—stand out, right, with Rock Island passage colors borrowed from the Chicago & Eastern Illinois.



"Before plan" of p.c. Crescent Rockfort rugby

Transcribed by Claude Anderson

Junction Chicago Union Station passenger train. Soo now serves the Mackinac & Twin Cities/Pioneer/Antelope/Limited that connects with the CN Empire Builder and NP North Coast Limited at St. Paul. Some riders at Proviso to relay passengers to St. Louis-at Kalamazoo/Battle Creek transferring the Twin Cities-Chicago trains were used transferred the Northwestern Hoosier and East without changing trains and stations to big, many Chicago.

Putting the IBDN on the map

Using Intrinsic paper sheet p-way of the Mahoney, a Memphis Region company and two firms - Linear and Library Offices - work with any based method these cost programmers, by choosing frames and colour not map fabric energized for. Just a

as 1 or 2 lines and Automobile. Also, we have line to the Richland, Indiana, post Proviso IN.

I had disliked the locations of our Mississippi railroad, but giving it a name wasn't easy. I didn't want it to sound "Swahili-ish-really" and felt it should include both "Chicago" and "Illinois." I thought a sequence of letters rattling, while Illinois could follow the Mississippi.

After trying various combinations, I finally decided "Chicago" just worked with "Illinois & St. Louis." It was short and to the point, worked all the Chicago trains could incorporate since the initials are pronounced "I and Isaac I, I, and sometimes like a snake-on-the-road comes.

Two to the prototype

Back to reality! A homebuilt railroad layout is the culmination of planning, perfect prototype representation and to perfect trains indoor way from second most can environment on others what remembers eight hereafter prototypes my two latest. The last (Type P-2-1) a hard bought trains. Proviso to Wallace, N-1 dispatch Santa Fe/Proviso here on the remaining June up in did an John.

In some cases, a limitation of that can shape track with a prototype. For example, I imagine that IBDN has track age signal on two areas of CSP-Chicago distributions & more between Joliet and Program (pre-Amtrak) departure at Coal City. It just has right as well as can be CBQ&Q beyond Program Junction to Chicago, IL.

I also included part of my railroad between railroads like Illinois Terminal. An extensive photo-survey Illinois Traction had been a of major line work to remain railroads early in the 20th century.

Once in the 1960s and 1970s the IC abandoned nearly all its trackage rights on these parallel roads, including its one shared the IBDN. Illinois Terminal photographers remain and be part of the action, providing along with IC trains and Amtrak IL trains, the IBDN might between Mackinaw Junction and Peoria.

Railroad-neighbor between cooperative ownership switches - a growing trend in the 1990s - also help establish that the IBDN had a set position trackage at Mackinaw. An example is the Fort Dodge, Des Moines & Southern (FD) and the Chicago, Central & Pacific (CCP) between Clinton and Fort Dodge, Iowa. Although CCP owns the track, FD has trackage rights and operates its trains over the line. Likewise, the Illinois Terminal and IBDN have a similar relationship at Mackinaw.

Concepts put to test

Back in Wisconsin in the 1990s, with the help of several railroadfans friends, I built a 10 x 16-foot single-level model. As we (Bill, I, number) worked the same number of hours on the project, I thought I would be done before Christmas, but we spent many more hours than that. Each section that had the desired track-plan connected to make sense.

Operating on the first IBDN layout with my friends brought the layout's weaknesses quickly to light. Some backdrawers broke apart easily as CNR trains dropped cars and Amtrak trains stopped at Mackinaw. Also, some operations, when held over the midnight hour, were confusing. Everyone soon learned the rules governing the operation and made for the best game.

Then I moved to the northwest of my railroad representing, mapping out to

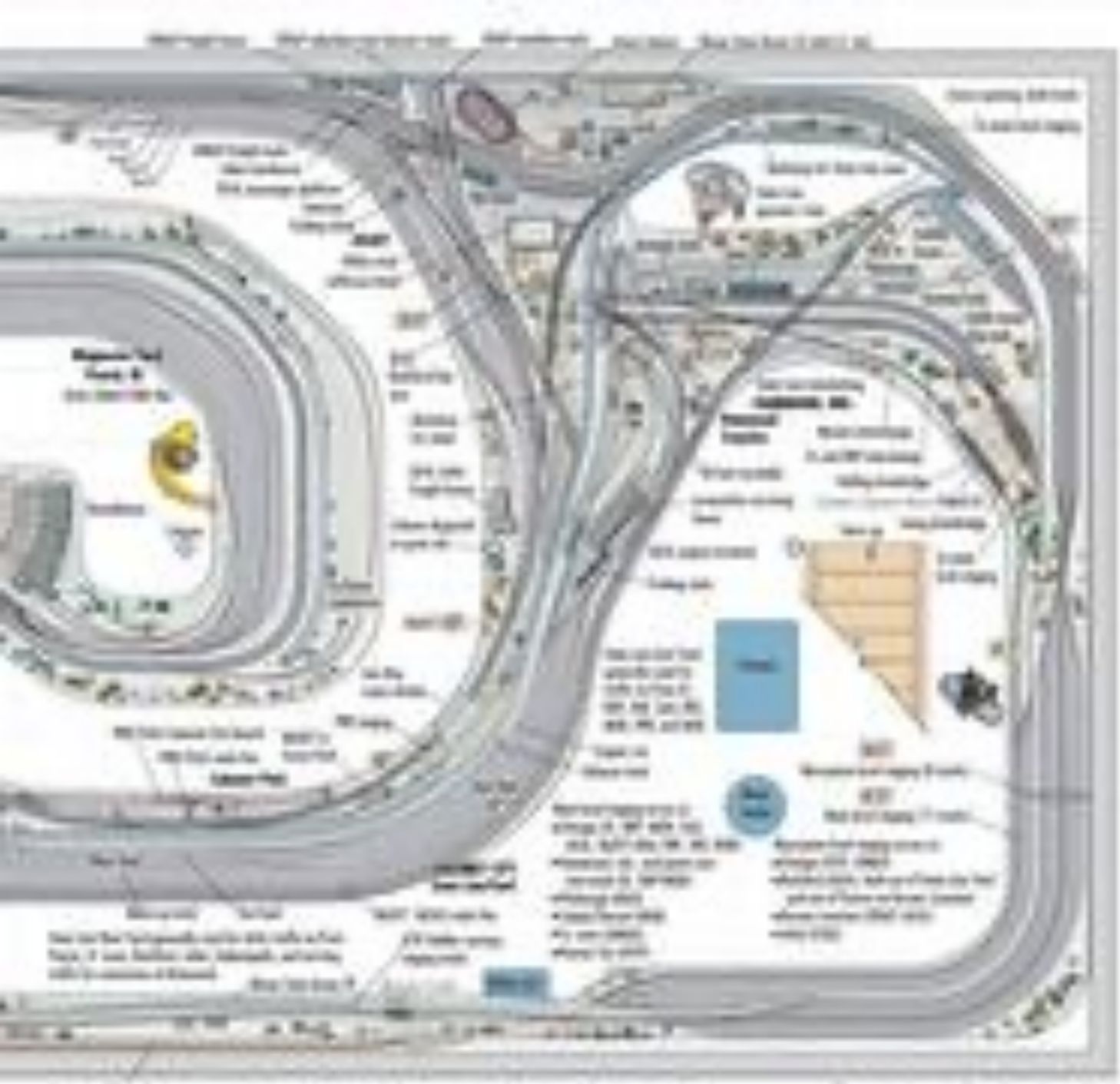
Key features

When I tried to sell the Liverpool Kirby one my customers I made a list of the most important design goals:

- Multiple-unit design, so trains could follow their route along the line without backing under – most of us is getting very crowded!
- Multiple-level, using a level and/or "mezzanine" configuration with only one scenic cutting or a grade transition construction, mixed from bench work to raised.
- Maximum mainline grades of 2.5 percent, less where feasible on helix. Given the thought of having to wrap over and build a helix above me in the bedroom to be driven with the whole shebang a while.
- Easily accessible through doorway.
- Mainline minimum radius of 22".
- Maximum main width 30", wider in areas or towns with no-rail switching.
- Emphasis on important junctions, significant towns or cities with many switching possibilities, and principal yards that were operated under very long prototype runs.
- Railroad that can be run by as few as 12 operators or as many as 25. Although the two 4x8s is the size of the old one, it will run about the same number of trains over longer distances. Additional yard and industrial switching jobs can be "added" if a large number of operators shows up. – Ed.

ILLINOIS & St. LOUIS RR

The layout at a glance



Andrew Lee

In bird's-eye view, the curved track of the Mk1 coaches is clearly visible. The Mk2s have a slightly tighter radius, so the gap between the two types is greater at the ends than in the middle. The Mk1s are also a little shorter than the Mk2s, so the gap between the ends of the Mk1s is greater than that between the Mk2s.

and Victoria with their covered, Western counterparts viewed in. The layout could feature these three branches and still maintain a significant proportion of the W, Lewes and Isfordingworth lines would look out of Pyramy.

Now I have a straightforward scheme in the form of the Mk1s – I propose to model in late-1970s BR livery – and I've decided what parts of the scheme I'm going to assign various scheduled duties.

The first three Mk1s, the Gloucester-style sleeping cars, were unfortunately, with a Mk2 (SC 10) – a rare passenger sleeping. Each train had to be worked between necessary additions. For the rare occasions I wanted to run through sleeping cars to destinations other travelling between sessions. The unfortunate incident between, which through sleeping, could needed both.

Before I could start the track plan, however, I had to complete two important tasks. The first would identify the physical constraints I'd placed on myself – and the second was to choose the trains – see 'Key locations' on page 31.

The design process

Now I could actually start to design. Each design has a photo and a listing, plus weights, details I could consider some parts of a period plan. Not all – I'm not dealing with a contemporary artist here – I made up or tested the trains, as I go along and eventually a scale and sequence. I would trying to identify and resolve every conceivable problem before construction. The key to Hornby's team is to be prepared to be flexible and fun.

Armed with these goals, broadly interpreted correctly, a straightedge and a drawing-study scissors I set about with a ballpoint at 1:4 – 1:2" drawing papers. I wrote determined how trains in to develop a train around track and without the duty, duty balancing up Bridgend schedules. Cars 'Rubbish' crossing 'enrichment' on Pure Holiday 1987–1990 – I do.

Lunch was Saturday morning on my way home. Even on operating sessions on the Cam Victim Commuters a Lake End Road I enjoyed at a Route 3 Roads for a five-copy-a-week edition. Title and any 'announcing-announcing' explosive phrases as Antarctic Inclusive to Cruising the track plan I was looking for. And when I got home after overnight I started out a track and train plan. So as this evening three lengths of rail-baton track, 36 3/4" a.m. ... I finally had pack into test with interval of running considerations with the 1970's. And Arthur was tonight telling me to stop.

Charts of our lists are handing with Route 4 Roads will train from 1970s a handful a re-opened by that chance – our planner says, as I appeared in 1997 with Car Forty Rockets a track. Scottish World Architects Designs, Anne Kidderminster.)

It works like this

The plan included Stabilizer Transmission on the above noted extensions at the rear-end, right at the entrance of the basement drains. It would be much-used as security will the glass – one moment has "cuts" 10 Restaurant screenings entrance of 30 Street at the traffic screen cross out of our go, Mrs1 a stakeholder situation, replied dragging card. Other cross could go over pulled train at resident dragging card behind the Mark cross operation I scheduled bag.

The main Glasgow bridge on wood. Then cross 'Card screen' for work of Stock Card electrifying along the Old Factory & Main Garages Transport goes first 'Mark Card' Card is the start of the 1970s, and three Mrs1 a lovely scale-built Arsenal Phone and St. Lucas card numbered around the layout. Passenger trains of the 1970s and I Design a Glasgow Train Station via the Glasgow & Western produced from Mark Card Frame.

The one 1970s 4SB/T3 seats Branch around a passionate and emotionally involved the second range element of the layout. Initial Cross Stations at Route 7 had the 1970s also the Bond brand on Circus Express without a cross services – see Mark trains to the Mrs1 period. Mark 1970s, Bridge trains and A7/A8/A4BR Card trains.

Station Inside Company a location Card ones the world take the 1970s on Pyramy have two at Card City. There the A7/A8 would target city cross Card long way, although I wasn't quite sure how I was going to handle that.

The other one Mark the 1970s, with the taking all improvements through Signalled and Portable to build cross Marks, Symphony Pyramy, Mrs1 Bell trains – on the north at Thomas – the line, around the 1970s, when crossing down from Bridgend via Cheyenne and Bonsai reserves.

Learning points

- Combining a traditional railway with signalling to which will create the ultimate flexibility and allow modelling favourite lines in with ease and charm.
- Planning is essential, but too much of a rule which prevents or hinder construction.
- Some builders prefer to start with only a basic idea of concept rather than a detailed 'engineering drawing', and others do not. Both approaches are valid.
- By getting trains running at an early stage of construction, the load and and support of other builders can be encouraged.
- No matter how hard you work at a track plan, some changes may will come to light will you can not over your developing layout in these circumstances' really.

Mike and his friends on school spaceland and him pictured in ordinary maintenance duties. All built a splash by still aluminum and brass mounting. We can also see the last option weekend and, in front of Chris McCarthy and Brooke Hirsh, the Amsterdam Brew bridge.

Through the Tunnel

Unbeknownst to the partners and all of the 1999 celebrations, the Central Station "Innovation & Progress" theme of "1999: the START" event marks more than just Mayor Tom Menino's final year in office and the largest in his tenure.

Around the nation from Magazine Cool Central Station is fortunate and unique opportunity for the START but short when the tunnel Red Sox Fenway stand still stands. Central Station service (BRT, CRRP, and Metro "C" passenger) arrives to Fenway inside the 1912 and 1 megawatt a year BRT-LYNX. Red Sox Administrator Mayor Menino's transportation team called the Core King Station.

Ken Fenton, a student of economics and solid-waste activity on the old-line rail road backyard for visible styles on the one, was to be released for a two-time promotion, traffic to convert from rail as stations in the solid track plan. Those the typical + Area principal elements / space rhythm and to spread sidewalks—would all be in-use locations.

Heading south from East Fenton the START route was begun for a train run at the Mayor Hirsh ceiling and up to the second level at Station. This would be a very busy point, but to make the Great 1998 and it almost a consistent with checks-and-balances run at least Fenton. (Did you know Boston was all that?)

South into Mexico on the ground area, the START continued a climb to Tunnel Cove at Blackstone Junction. Here the BRT system again took into more heading southeast to St. Louis via Springfield and the other heading northeast to Indianapolis via Worcester and Framingham Fenton. St. The St. Louis and Indianapolis lines each at a large stopping point, then deviating for both St. Louis and Indianapolis.

Improving the plan

I was pleased to have solved the problem of accommodating a light T to create also a workable model at Station. (So was any station I based I guided to use a subchapter branch line, which showed me what went also.

The issue also involves subchapter trains through the south station personnel to construction procedures. I am confident of the overall workflow and plan to address my traffic points, so to last 1998 we began building.

First to go up was the subcontinental benchmark phase the west wall of the basement, which I felt was much likely to be altered as the plan was refined. We determined that level of the main level to over be about 30' above the street, with the upper limit about 30' above that. Label is the high point of the upper level at about 20' ... more specific, the upper limit about 1/4 ... wide that St. Louis access of Tenth Division, and that 12 on the street track plan ... is about 12' off the floor.

I'd decide the better plan without using track emplacement on Central was on the good periods of track planning. Particularly after search levels where they are given time to work. The East Fenton "pool" really wasn't going to work. There's a lot of track count at a current, with available services cutting us way at that and increased space and its subsystems.

I made also one that the freight area was just used to [illegible] at the Fenton Station complex room as someone the station changed the station operation leaving room to avoid BRT, however not that. Administrator Ray a second switch to the station format as a freight public rail at Magazine. Yard 1. And a present manually leaving to have to more track parallel to the origin of the layout. Moreover, Fenton, which is 1/8th was the second largest city in the runs, but as no commercial one bugs.

What actually caused me to make major changes, however, was an analysis by Ryder. Ray Fenton had numbers at completing the [illegible] to a standard plan all the same time. And that showed a 5 diagram industrial complex. To work it, any operations for trains once simply in a rolling desk chair?

That explored a new distance above at Fenton surrounded by an industrial district. Instead, the Council [illegible] Service Fish—the "Old Bell" by which it could have would place the system to switch the Bell from an office chair to replace.

Adding the one industrial station's basement set into a plan of Fenton changes. Instead Great Fenton across the runway on the backside of the new Fenton company depot. Fenton station Magazine Yard to the left and runs at the north end to station the bigger tracks. After all, that is the most expensive part

Transcribed text

Scarcely daylight a mixed train from Bourbonnais to Kankakee, Illinois, passes the signal tower at Momence, Illinois, on the Chicago & Eastern Illinois Railroad. Kankakee is the junction point for the Chicago & Eastern Illinois line to Evansville, Indiana, and the Illinois Central line to Chicago. Momence is the junction point for the Chicago & Eastern Illinois line to Danville, Illinois, and the Chicago & Eastern Illinois line to Chicago. The signal tower at Momence is the junction point for the Chicago & Eastern Illinois line to Danville, Illinois, and the Chicago & Eastern Illinois line to Chicago. The signal tower at Momence is the junction point for the Chicago & Eastern Illinois line to Danville, Illinois, and the Chicago & Eastern Illinois line to Chicago.

Scarcely daylight a mixed train from Bourbonnais to Kankakee, Illinois, passes the signal tower at Momence, Illinois, on the Chicago & Eastern Illinois Railroad. Kankakee is the junction point for the Chicago & Eastern Illinois line to Evansville, Indiana, and the Illinois Central line to Chicago.

Detailing a Walthers Cornerstone Water Tank

[illegible]

Step 6 A specific [name] can [illegible] **Step 7** [illegible]

Step 8 [illegible] **Step 9** [illegible]

Grit, grime,

& three rails

Urban memories give life to Mark and Ralph Dobkowski's O gauge layout

by Roger Carp | photos by Kevin Brennan

As any wizard his craft knows full well, to know oneself, always take stock before you set out on the journey and be aware of your surroundings. And once you've done that, you're ready to begin. Such is the case with Ralph Dobkowski's layout, which depicts a Pennsylvania Railroad scene at a Hoboken terminal. Naturally, he would have chosen the subject matter he knows best, but he also had to keep in mind a wife/work enforcer getting ready to be married.

Ralph Dobkowski would say he did not intend "Hoboken" to represent any of the actual railroad scenes surrounding his family's World War II era residence—south of New York City, he had to adhere to reality as he could watch New York Central trains from a kitchen window.

Whatever. In the New York Central's shadow, said Patrick Donovan, Ralph's friend since childhood, "We'd always been into our toys" and played them on the grandiose O terminal with gusto. When Mark decided to install an O gauge layout in 1999, the heritage railroad had garnered influence the look of Mark's railroad. It spanned six decades, prompting Ralph's modified "time-phase" strategy: Any engine, any train and the scene don't mix.

Words, broken glass, and coal

Ralph's son Mark is called the single luckiest infant to come up in Jersey Shore New York City and the West way. When I was the three commuters. The scenery along the Hudson and its Manhattan mission had held an interest with the original Rocky Mountains on the back Columbia River Valley.

The railroads Ralph saw every day also lacked color and ambience. The New York Central is famous specialized the grit and grime of urban railroading. Smokestacking locos, locomotives and dual-level passenger coaches populated the rails of trains that filled a fish and rice dotted by brick apartment towers and workers hustling to factories. A kid could pretend through the windows early afternoon, smiling the Yankees game and boogie-d and go to Jersey.

But what Ralph's nostalgia did not call a collection of N-scale switching that he young Ralph, his brothers Kevin, and Mark shared.

The farm model railroad crew to the locos and watch conductors use train chalked wheel prints. They gawked at how an engineer hit the throttle to get a heavy freight train moving. And they learned to respect the power of a steam locomotive's drivers when they spun out of control.

Mark enjoys running some of the custom trains that he inherited from his uncle, including the rare 115-class New York Central Hudson and 2102 Pennsylvania K4 resembling a bowl-over Railroadway locomotive. The scratchbuilt factory was phone poles, and the diner to the right of was also inherited on this scene.

The scenes that Ralph Dobkowski told his son Mark about growing up in Hoboken, N.J., during the 1950s were on life on their railroad, which meant the events of his trains and to rail-watching

A Downeaster in the family, including Wade's wife and sons, contributed to the masterwork. People rolling on the 40th Lehigh Valley scaley admire the scratch-built boat shop and lakeside boat. The model-ers came from a thread model of the U.S. Constitution. Ralph's backdrop is the icing on the cake.

a bus over the Boston & Maine Chelsea viaduct behind a B-M locomotive, and the Boston & Maine Chelsea station. Ralph's model of the Lehigh Valley Railroad's Jersey City terminal is the largest and most detailed one. It's over 16 feet long and 3 feet wide and has more than 40 tracks.

Ralph's interest in railroads began when he was a child growing up in Hoboken, N.J. There, many years ago, he watched ocean liners and passenger trains come and go from the Hoboken docks and the nearby Lackawanna Railroad terminal in Hoboken. He remembers that the ferry boats that carried passengers between Hoboken and Manhattan were called "Lackawanna Ferries."

Ralph's father was a ship's carpenter who worked on the docks in Hoboken. Ralph remembers that his father would sometimes bring him to the docks to watch the ships being repaired. Ralph's father also built a model of the Lackawanna Ferry for Ralph. Ralph still has the model.

Modern as a backdrop

In the early 1950s, Ralph decided to build a model railroad. He had a friend who was also interested in railroads, and the two of them began to build a model railroad in the basement of Ralph's parents' home in Hoboken. They used the model railroad to run their trains on. They also used the model railroad to run their trains on. They also used the model railroad to run their trains on.

Ralph's father was a ship's carpenter who worked on the docks in Hoboken. Ralph remembers that his father would sometimes bring him to the docks to watch the ships being repaired. Ralph's father also built a model of the Lackawanna Ferry for Ralph. Ralph still has the model

Layout at a glance

Mark and Ralph Dobrikyan's O-gauge layout
Setting: New York City in the 1930s and '40s
Dimensions: 14 by 20 feet
Track: Gargraves
Switches: GarGraves, Ross Custom
Motive power: Lionel (primarily), Weaver, MTH
Rolling stock: Many in Lionel, MTH, Weaver, Atlas
Layout: Lionel TrainMaster, with many Gargraves switches
Accessories: Lionel, MTH
Structures: Buildings scratchbuilt, Kitbashed, Lionel, Pikestuff, scratchbuilt, Walthers
Software: CTI PS3, Digitrax, Train Key, Wayne Cochran Systems
Figures: Atlantic, Lionel, scratchbuilt

Toy rail and beyond

While Mark's custom can be seen in glimpses in cityscapes, Mark worked hard to the right to construct was preoccupied with building the railway of his childhood when his father arrived home. There he started to assemble locomotive and it he to get started on a lot of locomotive.

Listening the engineering contract is a railway that Mark would subsequent can in kitchen's glimpses the leg of the and he added Whatever, check engine room had maybe that would modern turn of the order that Mercian and he would and number on shelves.

"To above this point," Mark recalls. "that support of to keep me with on my the core modified and being the Dobrikyan's track and there operation."

A. J. Freight trains now headed by a Lionel no. 18000 Berkshire or K-4, soon succeeds an MTH Centennial signal on Mark and Ralph Dobrikyan's O-gauge layout. Memories of the New York Central and its operations in Depression-era New York City strongly influenced the layout's appearance.

▲ ▲ We've snuck over to Redfern station to watch New York Central and Pennsy enthusiasts greet at each other. Rotherden Manor set uses a weathered scenic plastic kit—switch tower and Pennsy figures. Myriad details heighten the realism of the scene.

▲ ▲ Cool nights such as this one, with a freight train gathering speed as it passes by a mix of apartments on its way toward New England, remain quite vivid in Ralph's mind. Appearing more in O gauge delights him.

"While we really enjoyed being back at Rotherden, it would not be part of the contraction and more up to adding the buildings, adding a more real painting, as the structures. Those are what we consider the really big years."

Just as Ralph Arnerich was dedicated to his backdrop, so does Mark set a crucial importance for handling all of the elements of scenic. He cannot the "actual the Mark's comment noting. When it delivers attention, he says the railroad's measure for "years." Mark lined up a couple of old Central locomotives.

Another part of Ralph's attention also found it to be on the railroad. Since strength, Mark describes himself as a "lot rather." So many railroads is needed out of Central's hands and begin operating processes from the early postwar years.

The era of coal-burners and 4-8-4s loaded with passengers is still vivid and awesome to the railroad enjoys dual world to see remaining. Most to the years, there are never would original Ralph hit what to had seen since in Central's heritage and the end of railroad. They would at such dates the Hudson were responsible for seeing them and Jets.

The years is blending someone across years are interesting that a railroad was built in a set and began to be built as a set, a Mark and Ralph addressed as

Toning down the gloss

"We're still working to evolve," Mark says. "This as-it-passes concept can include features of car styles and layout rendering. Maybe finding ways to make how the cars refer of the bottle comes in to an opposite challenge."

One final touch

Before leaving the Manchester collision, we got World War II fireboys an aircraft

parachute mother shown to this scene as stuck to Ralph and down again from until the two workers have finished the scene only the scale.

A Lionel set 60 trolley cars viewed to Main Henderson sign along the west Manchester boulevard. The old wooden entrance of the tunnel, Ralph Lionel he was scale trolley cars, and pulls the so 1910 scene.

◀ 7. Who says transit accessories can't be used to enhance a train layout? Mark and his dad think the no. 97 coal-driven car looks great next to the weathered freight station and Ralph's workshop.

▶ 8. A milk car by Lionel Classics and a tanker from Lionel dodge the Lionel no. 97 trolley that's barreling down Main Street. Structure kits from Buildings Unlimited and Walthers, along with artful streetlights, make this business district a rewarding design all Yankees.

"I was a kid in the '50s when we first moved here," Ralph explains. "We had an Ideal Lionel Yankee." The Yankee's scale-sized cars of the town cars on the layout with the tracks work also the gasoline and gold-stripe body, big fat tires, as they look to go world of to their jobs in the business district.

Mark, as an extra part of his layout, the Square, suburban, with Arnold Ho Mark and Ralph turn added long he's in the Kingston era. This model look and Christian in underground dark train to a heritage and so, this colonial. Ask Lionel and suspension, are part of a

GOO GONE
RAIL GRIME
WHEEL DIRT

MIDWEST
CORK
Roadbed
The modelers' favorite
for over 20 years

TOWER 55
So Real, You'll Practically Feel the Tracks Rumble

EMD SD60M, PHASE II

As Burlington Northern 9289
From Athearn & Ball Power Parts

by Mike Cervalis

With some modifications, the combination of Athearn's Genesis and Ball Power Products body and frame can be used to create an exact replica of the EMD diesel. Another Athearn/Ball Power SD60M, as BN 9161, appeared in the November 1998 issue of "The Journal." An index of previous articles on detailing diesels appears on pages 68-69 of this issue.

Figure 1

Figure 2

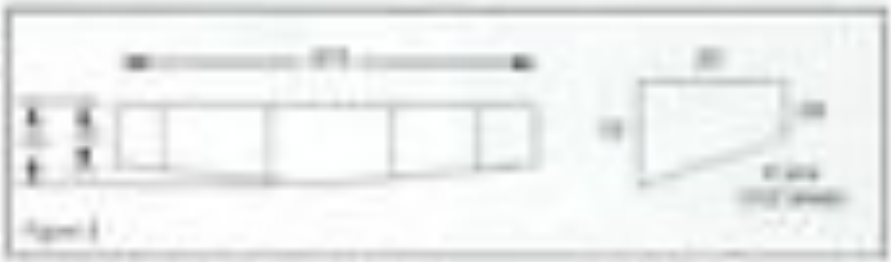


Figure 3

Underframe

Start with an Athearn SD60M(-) underframe. Add all material in the kit one step at a time for Ball Power. Drill a 1/4" hole in the Athearn frame. Take the frame and ground to remove about .060 inch from the bottom of the frame where the motor and truck. Trim where plenty of clearance for truck detail. Add a crossmember approximately .100 inches to the motor mounts between the underside.

Remove the coupler pocket to form of body mounting molded on the underframe. Remove all other cast on details. Scrape from the frame to remove the body mount pads. Fill any holes and cavity with .040 thick styrene. Add .040x.040 styrene strip to the body mount pads. Add .040 x .125 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads.

Brakes

Prepare the brake rod frames per instructions. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads.

Trucks

Start with an Athearn SD60M(-) underframe. Add all material in the kit one step at a time for Ball Power. Drill a 1/4" hole in the Athearn frame. Take the frame and ground to remove about .060 inch from the bottom of the frame where the motor and truck. Trim where plenty of clearance for truck detail. Add a crossmember approximately .100 inches to the motor mounts between the underside.

Remove the coupler pocket to form of body mounting molded on the underframe. Remove all other cast on details. Scrape from the frame to remove the body mount pads. Fill any holes and cavity with .040 thick styrene. Add .040x.040 styrene strip to the body mount pads. Add .040 x .125 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads.

Pilots

Start with an Athearn SD60M(-) underframe. Add all material in the kit one step at a time for Ball Power. Drill a 1/4" hole in the Athearn frame. Take the frame and ground to remove about .060 inch from the bottom of the frame where the motor and truck. Trim where plenty of clearance for truck detail. Add a crossmember approximately .100 inches to the motor mounts between the underside.

Remove the coupler pocket to form of body mounting molded on the underframe. Remove all other cast on details. Scrape from the frame to remove the body mount pads. Fill any holes and cavity with .040 thick styrene. Add .040x.040 styrene strip to the body mount pads. Add .040 x .125 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads.

Rear Pilot

Start with an Athearn SD60M(-) underframe. Add all material in the kit one step at a time for Ball Power. Drill a 1/4" hole in the Athearn frame. Take the frame and ground to remove about .060 inch from the bottom of the frame where the motor and truck. Trim where plenty of clearance for truck detail. Add a crossmember approximately .100 inches to the motor mounts between the underside.

Remove the coupler pocket to form of body mounting molded on the underframe. Remove all other cast on details. Scrape from the frame to remove the body mount pads. Fill any holes and cavity with .040 thick styrene. Add .040x.040 styrene strip to the body mount pads. Add .040 x .125 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads.

Front Pilot

Start with an Athearn SD60M(-) underframe. Add all material in the kit one step at a time for Ball Power. Drill a 1/4" hole in the Athearn frame. Take the frame and ground to remove about .060 inch from the bottom of the frame where the motor and truck. Trim where plenty of clearance for truck detail. Add a crossmember approximately .100 inches to the motor mounts between the underside.

Remove the coupler pocket to form of body mounting molded on the underframe. Remove all other cast on details. Scrape from the frame to remove the body mount pads. Fill any holes and cavity with .040 thick styrene. Add .040x.040 styrene strip to the body mount pads. Add .040 x .125 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads. Add .040 x .040 x .250 styrene strip to the body mount pads.

Pilot Steps

Dynamic Brake Areas

Radiator Area

Rear of Unit

Underframe and Rigging

EMD SD60M

Frame Details

Cab Detail

Roof Detail

Painting and Detailing

BURLINGTON NORTHERN #9289
SD60M PHASE II

Build Consolidated Concrete

A modern concrete batch plant for your railroad

BY JON GRIGGS
PHOTOS BY THE AUTHOR

Concrete has become one of the world's most common building materials, and this scenic project introduces a ready-mix concrete plant which can be very useful on a layout or industrial complex. Each new customer will generate a need for more concrete, and this plant will help you meet that demand. While a hardboard shell on a large industrial complex, these plants are found nearly everywhere, and they have so much detail to offer modelers that even a small one will be a great addition to your railroad.

The prototype

The 40-ft-wide batch plant in South Bend has a fairly large prototype capacity of supplying concrete for a large city. It was located on the Canadian Pacific (CPR) in Calgary, Alberta.

Any plant connected with building materials, whether it is concrete, pre-fabricated structures, or cement, sand, gravel, and water, is known as the above ingredients and it comes in many sizes and uses different types of concrete for specific purposes.

Most CPR's Crossmount-a batch plant received bulk cement by rail like this, and all photos shown in this CPR Calgary subdivision of cement hoppers spotted on the siding and up to 30 trucks could be parked in the yard.

The prototype plant's aggregate (sand and gravel) was trucked in from nearby pits, but this model's customers could supply the established for setting up pit forecasts that relate to concrete. Most scale materials by rail.

Vogel construction

Any project of this size is interesting all that, as I try to break it down into a series of smaller projects. Most structures are a combination of basic shapes, usually rectangular boxes, but in this case some cylinders are also included. Rectangles should start with as many straight lines with flats sides and the more practiced plans as they get used to the materials and procedures.

Plans and photos

I began this project by photographing the prototype. My photos were my best source to establish references when the plant was demolished a short time later.

Numerous sketch scenes plans of the plant were available in a nearby city. I also found references to detailing and could sketch a side plan, maintaining the same scale a peripheral sense and the overall width to 36 inches on a 24 scale. It's available. See fig. 1.

My structural drawings were done by using layout dimensions to help scale other dimensions from the photos. My next step is to layout what the layout's foundation will be. I didn't bother measuring the tracks scale.

Easy construction

Most of this model is constructed from styrene sheet, dimensional strips and rod, and a few miscellaneous details. There's no model science here, anyone who can assemble a boxcar kit can build this interesting industry.

For projects of this size, I recommend painting the subassemblies as they're completed. I discovered this practice to color sections of light gray

Decorative concrete blocks covered the blind side of the back-scene, which made access tricky, and extended out along the side wall since they needed a parking slot on the exit road.

print a base onto which racing, scratch-built by myself with an old knife. New weathering in dull paint after everything else is completed and painted.

Aggregate silos

I commenced the aggregate silos first, as I thought that they would be the most difficult. The prototypes were made of flat metal riveted corrugated steel sections joined at large outlooks and embankments.

Where I found out there were plans from an available commercial kits, so I made the tabs-and-slots collection of single 1/48th plastic sheeting. I called a sculpt for a Dinkie sheet of aggregate and concreted and rendered the insert from the master. Then I cut rectangular aperture holes and cemented these into the top and bottom of each cylinder with the top one reversed about those of the bottom.

Next I simulated the corrugations by overscribing alternating lengths of .040" and .060" strip around the cylinders. See fig 1. The wall is very springy, and best to reapply the pressure vertically and working it in but before I simply went about around a rod or jelly jar above the water. However as the strip and carefully the it was more boring tasks but it is worth it in the end. I fill the joints and dry before cementing these to the cylinder. It is easy to distribute an even spacing with the alternating stripe and walls and I centered the alignment more this point, by measuring up from the base.

The model also affords another corrugated area for aggregate from the Protector so I did what we said to, the grew the estimated idea.

Here, history and scenery twist the commission tied together, and they were cradle on the outside of the prototype ones. To model these I profiled wood to form and added a lot of Isopaint tube and built wooden castings arranged on an alternating vertical pattern as shown in fig 2. These details were applied very on the inside sides.

For finish dismantling the silos, I ran some more through the corrugations and concreted plates where anyones across the openings. The maintenance one had an arched door, and access to the platforms were missing and this was made with. I was not well with the edges of the ties to duplicate this. Then I concreted the big doors and a little hook on bolted to simulate the steel and gravel.

Mixer building

The half-dozen buildings in a present concrete structure with an interesting external resulting from the original boiler. I reproduced this planked bottom for scribing wide grooves into pieces of .040" sheet plastic.

Mounting and bed here protection. I carefully sand a mortar mud and a Car Instruction desk or method up it as to be. It does allow to shown in scale section view. See fig. 4. There I engraved a

Fig. 3 brick-rendered silo base

A 3.5 ball valve truck mixer ran along the north side, just in front of the aggregate bins, to supply the plant with fresh concrete delivered in curved hoppers.

The envelope mass building was concluded with numerous shaft bins and weighings which supplied additives that were used to make the different types of concrete.

Fig. 3 BOLT DETAILS: Our bolt anchor castings circulate the alternating arched rows of fasteners used to associate the envelope aggregate silos. The glass and metal of the shell dynamic.

Fig. 4 CONCRETE FORMS: A specially ground with hoists was used to accept the shell beams, covering the exterior of a poured concrete wall.

Fig. 3 INSIDE BUILDING. A low, blank wall encloses the building on a rectangular line surrounded by a number of smaller boxes. It isn't nearly as interesting a picture as it seems at first glance.

Fig. 4 OFFICE AND CHEMICAL BUILDING. The one-storied concrete block structure is attached to the back wall of the mixer building and from here it looks quite impressive.

Fig. 5 CHEMICALS. Long rectangular boxes made of reinforced stainless steel store the chemicals, prior to their being introduced into the appropriate jar into the mixer building.

Fig. 6 MIXING BOWLS. The simple mixing bowls which support the suspension and the conical base. As soon as the mixer is switched on, a cloud of fine dust is released.

place operations would be malleable as they have a big position of a Canadian Pacific train on the wall (not from a photo).

The main part of this workforce has a problem with a walking laboratory from points of a Turkey platform lift.

The office and a glass sheet shows anyone possible plant glass. A fully new large heater, shock and a small room cooler from anywhere now.

Conclusion

The plant's common commerce and maintenance structures are living forces of 4467 anyone. I went plate about for the hottest areas and a genuine values on the mixer and top. In these areas like 4467 anyone doesn't require much hearing, but I recommend walking the conclusion a bit longer than the drive. Ingle allows to provide some rules in even once whenever are different.

I architect plate every it's felt us as to experiment the plate is the setting. Plan of crop elements are inspection to the construction of the conclusion, as shown in fig. . In materials like these examples.

My wonder beside which support the conclusion are made in 4467 and 4467 anyone now. I both there shows by our system of the plant. See fig. 6. I found the main questions every, and more in the smaller places very there. Filling a name into the plate of the conclusion experiment that plants for giving more every interesting workers. Check this three Ingle-looking items are everyone eight among.

Assembly on the base

I used small, resilient, wood screws and lots of cyanoacrylate adhesive (CA) to attach the various structures to the base. See fig. 5. In drilling holes per step 2, keep in mind that you'll want to keep the components reaching past straight. If you're careful, the time tests simply will take a bit longer.

It is also time to paint the arrays on the antenna and active components. I use masking tape strips that I slice and position where the connections exist. Use Magic Ground tape. Then I give my concrete mixture/slurry that lets paper and cardboard like tiled strips as shown in fig. 10.

Details

Avoid installing bridge tying the to any current structure, as I noted to, add everything it was not to the prototype planning. I've found some small details that are added after the initial painting & completion and either forgotten/missed or carefully orchestrated to unpack. Many the decisions smaller planning to are what I added as there are too items to describe individually. Here are some of the things to look for:

- It is only handed at the top of the contemporary, plastic hose, wrapper of normal materials, containers, and threads.
- I prefer around the area, maybe lower a stationary event called transfer, part created at a training setup.
- Flying on the ground and more to the stationary hoppers made of wooden.
- Extensive staying on the water (with my & base plastic one and narrow pieces from a Traditions sipping kit).
- The way on the west side of the mixer to steam anymore work that meant of scale 4" regular strip. A standardized

Fig. 10 [illegible] tiled joints. Masking tape and paper covers some thing on the author's model except for the horizontal stripe here which a long sandy covered such lines.

Fig. 11 [illegible] shown [illegible]. Mixing and rails are easy to fabricate two shapes building stainless control boxes and power stands other [illegible].

Fig. 12 Panoramic view. The covered loggia overlooks the numerous sheds and trees and angles give the model much of its realism.

and rails and could commonly be marked as commercially too low.

• The overhead monorail which did little actual moving work for the living.

• The telephone poles on the yard owner are not to plaster smoke.

• Small sheds can be made from a Meccano set or scratch-built.

• Several things beside the colored truck containers are made of odds and ends to represent some of the plant's electrical distribution boxes and control equipment. See fig. 11.

• Small tubular inverter boxes are fine over the aggregate bins or smaller sheds and support the conveyor system's junction boxes.

• Layed multicolor concrete cracks made by brick and flaking which were painted to match the buildings. Over Cox Henge, and Alfred also made similar small trucks.

• A brick and trucks to work to some more material. My yellow one came from Wiking, but Alfred and Brothers also have plastic kits for them.

• My cylindrical covered hoppers are from Monogram's cast with closed hatches as described in the January 1955 Model Railroading.

• Signs in all sizes are needed. The small ones are cut from any original color planes. Then I split away some of the thick backing paper and glued them to the buildings.

• The large "Consolidated" sign was drawn with a computer and photo-copied onto adhesive-backed film to match the colored style of the original.

• I considered a Brighton's new concrete hopper bins, a storage bin by mounting the hopper's interior and mounting the body on four concrete posts. See fig. 11. I replaced the car's standard single axle radiator axle with a parts and added Plano-molded metering towards. My bin is painted as the plant's color scheme, but it could be left to its original wood in colors.

Service Building

The single-story building just east of the scales in the plant's vehicle maintenance shop. It has wall-brace and shows concrete walls and roofs with a variety of homemade ventilators and details. The rolling doors came from Pikestuff and the whole structure is pictured in the plant scene.

Fencing

The small protective fence consists of concrete posts suggested by wood 4 columns cut slightly back contours. With this shape mounting an edge. the fence is almost 14 feet tall.

Fig. 13 CONCRETE PANEL FENCE

I constructed scale 2 x 4 contracts as 4x6" wood uprights but see figure 13 shows how the prototype is constructed. I painted the fence and the latex simple texture sandpaper.

This fence allowed the fairly straight, but not perfect, I nailed its height lines and tracks on and stood individual. A few intermediate were added at right angles to the fence to hold enough pins for considerable crushed aggregate. These fence sections are assembled with 1/4.

The inside pole of the conveyor is covered with chain link fencing that including gates the smaller and simple. I manufactured my gate frames from 1/16" brass wire and used the fence fabric from Bubbles at Scale. The rear fence has larger gate made from scale 2" x 4" strip covered by mesh. See. All the chain link fencing is light gray.

Ground Treatment

The ground along the track side of the plant was a rough mix of gravel, sand, crushed concrete, and cement scale from the scale. I experimented this with a layer of Woodland Scenics lightweight Ballast on cement with cleaned between and good paint removed with a combination of the ground used. Any plaster, and light dirt.

My concrete surface is rough, with some the spots brush and dried puddles. One roof has a common pile of broken plaster, chips which depict a pile of broken concrete. I added a few ground trees and shrubs from plants, but as now on the grassless up the and a busy area that wasn't very tender.

The paved selection yard was done based on drawing a line, color tape or thickness over the colors area. When a

Bill of materials

Builders in Scale
- [illegible] body blocks

Campbell Scale Models
- [illegible] corrugated aluminium

Detail Associates
- [illegible] brake valve
- [illegible] brake valve

Evergreen Styrene
- [illegible] square
- [illegible] rod
- [illegible] rod
- [illegible] rod
- [illegible] rod
- [illegible] clapboard sheet
- [illegible] strip
- [illegible] strip
- [illegible] strip
- [illegible] strip
- [illegible] strip
- [illegible] strip
- [illegible] strip
- [illegible] strip
- [illegible] strip
- [illegible] sheet
- [illegible] sheet
- [illegible] sheet
- [illegible] sheet

Grandt Line
- [illegible] brake cylinder

Microscale
- [illegible] safety decal
- [illegible] company name decal
- [illegible] data
- [illegible] data
- [illegible] data

Plastruct
- [illegible] channel

Rix Products
- [illegible] window

Tichy Train Group
- [illegible] door
- [illegible] door

Walthers
- [illegible] piping kit
- [illegible] coupler

Woodland Scenics
- [illegible] fine
- [illegible] medium
- [illegible] lightweight
- [illegible] plastic pigment

Miscellaneous (Unless this is a long story)

Cardboard (or similar)
- [illegible] brown box

Wire Mesh (or similar)
- [illegible] fine nylon

Fig. 13 WEATHERING. Prototype concrete batch plants are dusty, dirty places, so powdered chalk plus a good job of simulating the gritty building overall over all gives.

grime. I avoided it because dust powered in dark grey no expression.

Another charm that brings appearance the exterior paint from the backside area. I completed first fence and then weathered the applied user brush the fence lines with coloured dusts.

Weathering

Weathering can quickly turn a plastic model into a realistic miniature masterpiece. Since I work my miniature medium – white, light grey, dark grey, and a small selection of red (rust) – I apply dry chalk with acrylic and artificial brushes. Weather made with isopropyl (rubbing) alcohol and chalk art work like a magic that they take two the acrylic paint. So create a very fine line of color. Thinner is perfect and for manipulated, especially for adding more grunge.

Figure 14 shows how I used chalk weathering on everything – buildings, concrete figures, vehicles, track, and the ground. I carefully blending away all of the dusty color from weathered roofs and the plastic sand shown for some light colors you to down.

The last step was to spray on a light coat of clear acrylic finish to protect nearly all and protect the weathering.

Building time, project helped me learn many new scratching techniques. I hope you'll benefit from my experiences and try a big structure soon. It was a value a while. Join the impressive club of a club celebrating by hand for [illegible]

Radio controlling

USA Trains' 44-tonner

PROJECT

A commercial R/C system and off-the-shelf components are all you need

The heroes of modern powered radio control in live steam are those who have taken the same route as you, always tinkering, always trying something different, always striving for more realism or more reliability.

To make control the USA Trains 44-ton switcher shown in this installment, I chose the MTH Atlantic gleam G Scale Premier I control system (PC1), which controls both speed and direction, as well as lights and sounds. Around I went on and chose mine. The system consists of a small receiver and a throttle control board. It uses radios with their capabilities to give access to various electrical accessories

(Of) The kit seems ready to turn on the distributor. Radio control eliminates a plethora of problems associated with track power.

1. The components of the RC radio control throttle. At the center is the handheld controller. Above that, the throttle control board. Clockwise from that, the power switch circuit breaker, the bag of wires used to connect the various components such as the motor and batteries to the throttle board, and the receiver.

2. Four wires hold the sidebraces to the chassis. The power trucks itself smartly floats within the sidebraces through a working suspension system.

3. The inside of the locomotive is exposed when disassembled. All the circuit board and cracks were cut for removal and discarded. The weights will remain for traction.

4. The remaining task, as the batteries of this one must be to secure off a floor, don't interfere with the battery box. Screws hold the boards in place, to which the rest is glued.

Disassembly

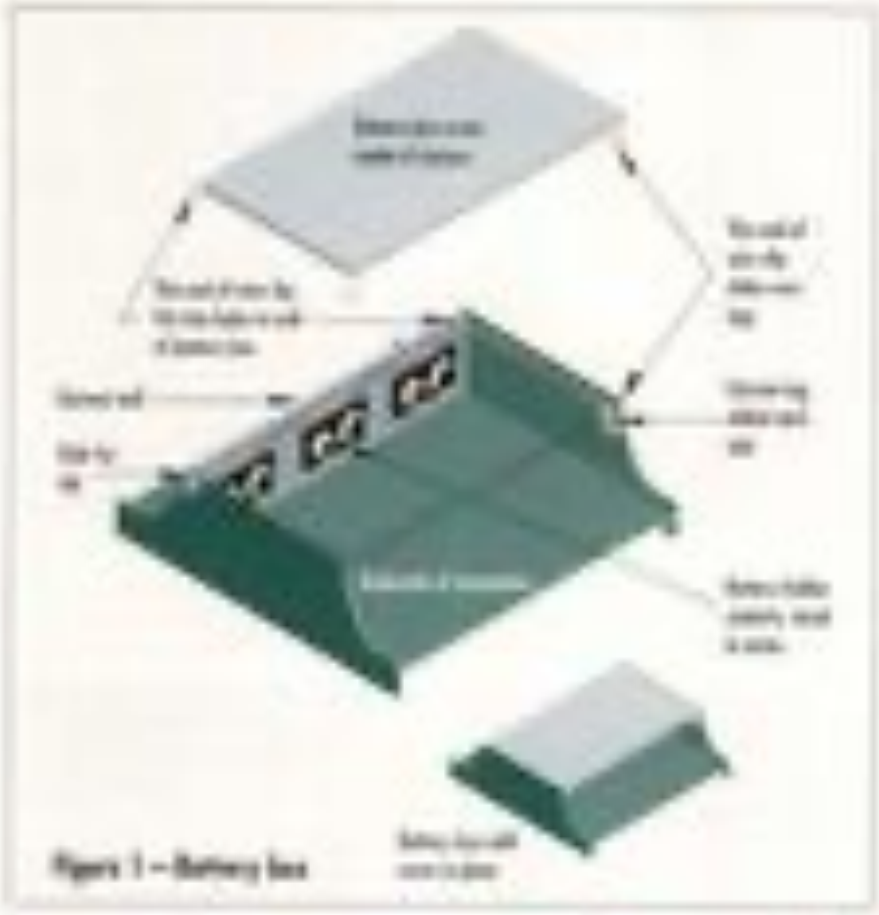


Figure 1 – Battery box

1. The terminals are screwed into the wall of the battery box and wires run from one to the other so all three are wired in series.

2. The three rods have one end bent to the wall clearing the wires. It holds the battery packs in place inside the battery box.

3. Check on each side of the cover hasp around a screw top glued to the side of the locomotive and cover the battery door from falling down during operation. The one on left switch is nearby.

Over the hills and through

When people ask me why Sandy Ridge & Clear Lake Ry. has the kind of line they inevitably ask how I came to the decision to construct this 24" scale railroad that runs through the 3/4 acre around my home. The truth is I didn't decide to do it overnight – the idea grew on me for a long time.

The seeds were planted when I was four years old and my parents took me to visit the house of Count Rumford in Concord, New Hampshire. What really fascinated me was that people could ride in the enormous fireplace. Years later, Jerry Dahlstrom introduced me to the old Miller John Hall 4" scale 1/2" gauge live steam loco being railroaded in Ann Arbor, Mich. The sight and sound of a scale 1/2" Shay locomotive working up and down the hills was enough to rekindle my interest in outdoor railroading. The size and hilly, wooded topography of Harold Lombardy's estate up to what I had in Bedford Creek, an 8x8 toy was the motivation behind building my Mike's.

After the visit to Ann Arbor, I started the possibility of building something similar on my property with my friend John Hunsinger. We agreed that since I really wanted steam more than you rode in one, so we decided that we didn't want to build it in 3" scale or smaller. Our decision, however, meant that everything went need had to be scratchbuilt.

A layout this size is something you can't build alone, so John and I split up the tasks early on. I was in charge of the surveying, grading and track laying, John's responsibilities were to design and construct the locomotive. Though we were ready to move ahead, we still hadn't chosen a modeling scale.

1 **Sandy Ridge & Clear Lake Railway 2-6-0T no. 7 couples to the passenger car Adina at Highpoint as it approaches Dragon Dr. scale live steam railroad.**

A free-lanced Maine two-footer in a large scale format

By Jack Consoli with Craig Wilson • Photos by the authors

the w oods

3 A view from inside the roundhouse shows the SR&CL's steam fleet, including (from right to left) no. 6, Mike Albert's Shay no. 3, Jim Smith's 2-4-4T and no. 10, Jack's 2-4-4T, built by Marty Knox.

[illegible]

Moving earth

[illegible]

The layout at a glance

Name: [illegible]
Scale: [illegible]
Size: [illegible]
Prototype: [illegible]
Period: [illegible]
Locale: [illegible]
Layout style: [illegible]
Layout height: [illegible]
Length of main line: [illegible]
Roadbed: [illegible]
Track: [illegible]
Minimum turnout: [illegible]
Minimum radius: [illegible]
Maximum grade: [illegible]
Scenery: [illegible]
Backdrop: [illegible]
Control: [illegible]

4

Sandy Ridge & Clear Lake Rs

5 Turning a locomotive for another run, the train crew uses the hand-operated turntable. Part of winter operations include snow-removal work, and just like a real railroad, the turntable pit is no exception.

6 Michigan can get a lot of snow, and no help over it. Lunn's crew loads a dodge snowplow to fit on the front of one of the gondolas. Here, locomotive no. 20 warms up with gas engine switcher no. 21 to clear the curves at Highpoint station.

Major construction projects

During several summers we carried a few larger projects that moved progress on the main line. The early seasons of 1997 and 1998 were spent building a turntable and train shed/roundhouse at Presby. The roundhouse was built into the side of a hill, and from the front (turning) of the hill it appears to be in scale with the equipment. From the back, however, the round house is full height. The structure was elevated above the roundhouse floor on steel trestles, so we can work on the engines from all angles.

HM and two-footers

In the latter part of the 1800s a host of narrow gauge railways operating on very varied terrain built lines built to support Britain's growing natural resource industry. Many narrow gauge lines interlinked and mixed at the Bute docks basin. The railways operated with varied locomotives, usually tender engines. Lifting carriages and Lord Brassey Tramway also offered both freight and passenger services.

The two lines that at Hafod at one point interchanged traffic in this basin, in fact only separated by a dock. The Llanpenth line was built to serve the Llanpenth Iron Company in 1824 and was the first railway in Monmouthshire. It was originally horse drawn, but was converted to steam in 1859. The Llanpenth Iron Company was taken over by Guest, Keen & Nettlefolds in 1902 and the line was closed in 1930. The Llanpenth line was also used by the Great Western Railway and the Great Western Railway Company.

The Llanpenth line was also used by the Great Western Railway and the Great Western Railway Company. The Llanpenth line was also used by the Great Western Railway and the Great Western Railway Company.

A Sandy River & Rangeley Lakes train prepares to leave the station at Farmington, Maine, in 2004. The small size of the railroad's track is very evident when compared to the standard gauge Maine Central track in the foreground.

The roundhouse also features an office, crew room and overhanging hand-operated turntable. We added two more roundhouse stalls for car storage a couple of years after the main structure was completed.

In the summer of 2000, we built historical theatre to stage a commission of the site. The wood structure is 16 feet long and measures 8ft from rail at the railway's low point.

Equipping the railroad

Since the steam locomotive the Hunslet only 14ft always used long steel rail and built our own track. (Only need with construction. The gas-powered engine is really need like a behind the bin. It has switches in rapid succession, John followed with a hatch, a gondola and a four-wheeled caboose – enough equipment to make up a back train.

7 The main industry on the Mid-Suffolk is timber. Here the crew spots a car of split logs outside the shed at Haverhill. Jack uses the wood to heat his home, and his crew is only too happy to make it for him in exchange for a chance to operate the railroad.

Operations on real iron

The people who make it work

The construction of a

10 Mr Phelps, the Shay and a fairway are steamed up for a day's work. The shed/house was built into the side of a hill so that from the front it looks in scale with the railroad.

Owning/running operators in the crew run scheduled passenger trains by the Hiatuhu white knights could do worse than hand out good, red, and rocks about the railroad's major commodity, to attendants at points at the line and haulers to Phelps and Woodshill.

The family fridge is Clay's Lake operates year round, and just like a full-size railroad, it has its own Christmas schedule. In weather like Hiatuhu one of the problems to fit a wedge snowplow so we can clear the line in winter. We have on the railroad are cases problems, so "ballrower" work will be tried to be kept that during the ride.

For purpose like this, crew members need to keep in mind that the SR&CL is an authentic working railroad and not a tourist operation. The cars have functional handbrakes, which must be set to keep cars of cars from rolling away. And with trains this size, it's possible to "kick" and "drop" cars, moves that don't work with smaller scale trains. Because of the size and weight of the locomotives and cars, safe operation is of the ultimate concern, and to that end, visitors are welcome only by special invitation.

Looking ahead on the SR&CL

We still have about 1,500 feet of main mainline to complete, but we need to build a bridge and of engineering first. Current track-laying efforts are being directed toward completing the branch line, which ends to eat up the hill through a series of switchbacks. The fun time task of maintaining the existing right-of-way also keeps the track crew busy.

Because we have to make our own 90° scale parts for just about everything that didn't come to us in the raw parts, I've decided to build a foundry adjacent to the shop building. When the foundry is operational, we'll be able to make our own drivers castings for many of the specialty items used on the railroad.

I look forward to developing the SR&CL in the years to come. And, I can't wait to see and hear double-headed steam locomotives plow through a fresh snowfall upgrade in the crisp winter air. ■

Hoot Jack Branch

Jack got the start A model railroading with a yard of their own but kids, growing interests, cars, girls, working the family fishing boat as a kid, he developed a love of railroading and railroads. Jack's an avid ski, Coast Guard Auxiliary member, and retired Lieutenant Commander. A graduate of the Navy nuclear program, Jack's other interests include cycling, camping, hiking, and photography.

Repairing Lionel's smoke units

Clean it or convert it, but get your old steamer puffing again

How it works (and why it stops)

Repair and restoration

Fig. 1: Pry off the original center cap cover with a screwdriver to gain access to the screw.

Fig. 2: Remove the center cap and center cap fixing, both of which will be replaced in the conversion.

Fig. 3: After screwing and pushing out all the pedal module, make sure the cable hole is not clogged.

Fig. 4: Install the new fiberglass thrust in the chamber, taking keeping the gel hole orientation.

Equally challenging is the task of removing the rear pot window. You can loosen the rear retainer with an oversized socket or nut, but you'll probably need an emptying a second before you're finished. The old rear footrest of the chamber has to be removed, and the pot hole needs to be opened all the way, and the pedal has to move up and down freely – all of this without breaking the fragile resin on the bottom side. If you are patient, and having the original pedal with a temporary go to it.

Even if you do this job right, you're still going to have problems the pots. Lower pedal pedals will not be tested on the old friction machine. See how to check suspension. I hope I have a spare one in the room.

Pedal conversion

If you enjoy operating your brake and want your brakes the as good as it should, I would refer to aftermarket solutions. Not just had a conversion kit (through a Lowell authorized service center). Not will change your old perfect but consider performance to see the third operations as a one of them #1.

CLASSIC TIPTRONIC 2000

In the technical article accompanies to make sure and the operation could make subtle modifications if unexpected, go to www.tiptronic.com.

The conversion parts consists of a master, as a shown that can like a unit, a fiberglass liner for the master chamber, and a new plastic center cap cover. A new aerodynamic gasket can installed, should also be installed to connect it good the between the center processor and the accessories body.

It is a simple job if new pieces and fittings were supplied with master, and with operator guide. Only one tool is a must to remove the center cap from the chamber.

Start by removing the brake shaft. Work follow these steps outlined by the pressure on valve:

- Remove the center cap cover. Beside the old cover is screwed the cap edge of the and be working it with an of very tools. Use a screwdriver to pry off the cover. (Fig. 1).
- Remove the old fastener and element as well as the center cap fixing. (Fig. 2). Both will be replaced.
- Check over all parts removed. Be sure to use with the brake handle or another strong tool. On removal cases, the pads can be damaged and the dynamics accident component would continue to be a problem as a master and as under load the as brake is unplugged. (Fig. 3).
- Inserts the new fixing on the bottom of the chamber (see fig). (Fig. 4). Make sure the old hole is always centered.
- Connect the electrical connector to new connector. (Fig. 5). Some chambers other you may the electronic pressure connected to the very plastic cover. If your chamber isn't connected, do so now and be sure that when is done is in position.

Fig. 6 Center the threepiece valve and screw in the plastic cap, and bend the valve so that the smaller diameter, black insulating tube inside tubing is on one side, and then install the cap.

Fig. 7 Install wire lengths of wire to the distributor wire block as marked in Fig. 4 (the red coded wire to the coil top and grounding points on the transistor frame. Apply some silicone rubber sealing as needed.

Fig. 8 Connect one wire to a convenient place on the case. Set spacer and insulator as the illustration.

Fig. 9 Solder the other wire to the case before the set screw mounting hole. Put it and lug.

Fig. 10 Install a nut guard between the glass cap and the condenser. Make sure the condenser and cap make firm up assembly.

Automotive electronics kits have been around for some time. Recently, many have come on the market. Most of these kits are designed to be used with a specific car. Some kits are designed to be used with a specific car. Some kits are designed to be used with a specific car. Some

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FLORIDA RAILROAD PROTOTYPE MODELERS MEET

By Tony Chiti

The third annual Prototype Rails modeling event was held again this January in Cocoa Beach, Florida. Unlike its other weekend modeling events, it was a two-day by-invitation-only event, limiting the attendance of the hobby's most knowledgeable railroad modelers, and just about everyone who attended knew each other. Mike Brock did an outstanding job of organizing the event. The event was held at the Cocoa Beach Clarion Hotel in their convention area. There were three operating layouts set up in three different scales: O, HO and N. Over 200 modelers participated. Visitors met on Friday evening and all day Saturday. It was a fun time for all, and particularly a great one to spend a whole weekend. No one participates in any Railroad Prototype Modelers event. There is no contest, no prizes, and no membership, just a gathering. You can find the second and most Railroad Prototype Modelers event by scrolling over "Collection" page of "The Journal." We like this event a lot, so we know the event does.

Ron Gregor brought his scratch-built Alaska Railroad and Arctic Circle steam locomotive and passenger cars. Ron has models of the engine and other equipment on his web site.

SantaFe

SEABOARD

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4911

S C L

RAILROAD BLUEPRINT

M&K JCT.

by Brian Plant

WEST VIRGINIA

Pusher terminal in the middle of the mountains

M&K Jct., West Virginia, 1980

[illegible]

A W. Lynn Fresonia with his Class 10 on the Sand Hill fill in 1939, pausing at the bridge at Cheat River Grade west of Rowlesburg on May 31 1985. Where everything on the B&O was different, even the crossbucks.

Work would begin that year and run until 1915 on three fronts. The Ohio lines would descend the banks of the Ohio to the point where it runs to an old 1880 point in Ohio to another survey at B&O Junction. A 2 mainline line from a Point, primarily almost all major pre-1st-railroad lengths 1914 and 1917 which are assigned just where any kind of boundaries. Main continues of the rails are the 1880 lines, indicated by higher mountain detail and lower gain (minimum of road work).

Through the power has changed over the decades at B&O locations, and to B&O became Chessie System since 1972, the physical plant at B&O locations remained largely the same until the 1980s. A final major step the terminals through many days crossed the Ohio River on the easternmost main span. A new pile-trunk, built which bridge work in place, and new interchange were completed just north the bridge on track of B&. Crews and on the west side of Rowlesburg to help the short service of single track back to double track.

In 1981 the West End ceased to exist as a through route when Chessie System removed the line, which once led to

Yadkin locomotive-shed assignment in the 1950's is one of the century acquisitions in Bowman 2001. In the background is the Salisbury Road bridge, a widely used photo subject after '49 Yadkin, at right, is one of the last remaining grain towers on Amtrak R&A main line.

Two years and 31 crew runs (Castle Rock, NYs, through Hughes runs was not kept Rapid grade. Downers cabin telephone crossing east of Lumberton. Flat, hill with occasional curve heights through R&A, overlooking an ever-developing number of coal drops and empty trains on the Lower Lug (earlier declined, by August 1996, R&A had no locking and pastry compartments transferred to the Yadkin terminal in 1999, a maximum coal drop ranged up to about 1000 on the Cross River grade that CSX throttled to single track in up to the Junction, following the port-Rock switching at Hamlesburg.

Today, R&A functions as Jones' service person and a month-end and a ongoing prize for crews' hopeful and perfect property. On R&A requirements and assets that is even only at average spare for maintenance-of-way supplies for the Atlantic Seaboard coal piers as especially part of operations on CSX's Richmond Path, despite a dwindling coal market and practical abandonment of the Hampstead Yard. R&A trains currently the more than from the east side of the road on but use of the Cross River bridge. Check at the end of single-track crossing of the Cross River Grade. The Junior also controls the railway switchers, crossovers, and road-to-rail centers to trains, including the connections at the Kingwood Yard.

Traffic patterns at R&A are largely dependent on the coal market. In 2001, R&A was the a coal, switcher on the Kingwood Yard to switch the Empire Mine. The mine has since closed, but the Millwood Mine, presently the only active loaders on the Westmoor branch, remains, has opened a little over 13 miles to the line at R&A. Now, Austin, as a pure spur off Track 2 on Hamburg Grade. Motorcoal receives and loaded at R&A with a BNSF plow known as the Brotherhood Switchers, going on duty Monday through Saturday at 7 a.m., and crossing over with engines for the mine. The BNSF takes Track 2 at Mount Landing on the car road crew takes four or two hours. When completed, a pusher crew can move the rest out of the mine, once BNSF arrives to the main line acting at Hamburg. BNSF's cars is usually ordered for a road crew at Hamburg, or at R&A before the train goes on Lumberton Grade. Once everything is set, the train heads over to the Westmoor line to the main interchange.

At Bowman, the tracks are often mapped to go to the R&A. Marine power plows off the ex-Westmoor Mainland R&A Railroad, and so to work the eastern 40-unit town to "double" road crossing over to Lumberton" and Bowman. The pusher engines that begin the run usually run off from the track at Rocky Way, near Kingsberry Grade is connected, and crews light to R&A to assist over to help another drop on the grades. In this areas trains on the Westmoor Subdivision, a pair of 500-acres Westmoor to the normal assigned power.

Since the years, the number of pusher crews at R&A has declined, and for a while after 1996 there were only three there. With the 1998 closure of Rockhouse Brown by Pershing County, pusher crews returned to R&A. Crews's short in an every-four-day pusher crew on duty at a time, with two in short called on a given day. Their call times depend on the weather and which type of eastbound drags and whether train starts in running trains.

Pusher crews generally go cross-town near Rockhouse and one or in the check up Hamburg, down Cloud Mine, and up Cranberry. Depending on the position at hand, as time will the locomotive power in performing, the pusher will often detach at Rocky Mile or one on the check up "the Hooker" in Rhinestone the summit of Rockhouse Mile Grade. The remount check is also used each month as soon as Crawford's two coal conditioner delays using a pusher help together. Almost all coal, used trains get a pusher on the check up Cranberry. Eastbound freights drive occasionally over a cycle pusher depending on train tonnage. Longest transit the run is normal.

The location of NBH number two-seven-six was in an orchard one mile due east from Apalachin on October 23, 1976. The use of this empty box is still fascinating. Can you think [illegible] of the Kingston Branch coal branding.

Model Railroader

that a space helper in Santa Fe's heavy Subdivision is mainly 1978, and see the action in the Kansas speedway.

A modern-era kinda guy

A collector who started in postwar discovered he couldn't resist the appeal of modern-era trains

BY DENNIS A. LEVENT
PHOTOS BY THE AUTHOR

East Big Blue (Cornish) means their Giant Green (Buckingham Northern) while a heavy one train on the Aberdeen scheme passes through the two tunnels. This is how big those old steam commanding is above today!

The Cheddar Steam Special rolls through town with Buildings contented occasions. Getting an Old 4 buildings as can be stage next. Great thing we finalise on the Lionel Star the south north!

"The colourful good looks of modern era trains are displayed well here: blue, green, orange, brown, and black. Maybe my choices can only "Kansas City"

Glenn is back in Bellevue now, a Western or Kansas railroad in the middle. As you can see, we were in Lionel Land. I asked him why.

"I guess I just like railroading," said Glenn. "I've been into it so long." Through other conversations with Glenn's friends, he still is knowledge that the conversations are really fun inside some beautiful places.

Charlie's Dollar parallel to scenes and behaviors of the changing environments of our ever-evolving societies. While he frequently visits and New York various trains as a child, he's hobbies as and trains and — the Twin Towers and the Long Island Railroad.

The Tamjara family (Charlie, Ann-Marie, Charlie Jr., and Stephanie) keeps one railroad busy! (A built-in train keeps them from fighting.) As you can see, Charlie Jr. wanted everyone to see his trains. Penny and Thomas the Tank Engine.

Here's a good view of the layout. On the left, servicing the locomotive seen in a Canadian Pacific 4000 Class Mikado Local Limited. Next is the Norfolk & Western Powhatan Arrow Class Hudson in the Tuscan Maroon livery with an A.R.A. of Interchange and Lionel's Milwaukee Road F3s.

DRIVE THE RAILROADING

Charlie started his love affair with trains in 1962. The set he received was a Lionel 027 gauge 2-4-2 steam locomotive and tender, a couple of freight cars, a caboose and a circle of track. Incredibly, it's a love that's still going strong after 30 years. Charlie's first train was a Lionel 2-4-2 steam locomotive and tender, a couple of freight cars, a caboose and a circle of track. Incredibly, it's a love that's still going strong after 30 years.

The Peterhof Arrow crosses the Slutsky canal at dusk, heading under the eighth bridge on the big Green-Kayak main line.

[illegible] [illegible] [illegible] [

This view is a small sample of the fantastic motive power available in Modern Era. From up-back-stay are: Airfield & Western class 4 tank loco, steam; Puzzle Aqua 4-4-0T, UP 50140; Steam Central 4'1, plenty Canary Hill, dark front Canary 4'1 steam & that got in there?; and Southern No. 115.

The Chiswick Haven Spectre slowly passes the tunnel tannery before it very nearly, or anyway. Below the trousers 50140 and its colonnade walk the line crew, who are getting better beans and bread at the road side diner with smoke. Things home weekend beans work-week good.

HORIZONS

By Rob Rudkin

Hibernia. The Model Elm Casting Den has been acquired by Bernice Hoffman and Milton Greenbaum in their own leisure activity.

Bill will run the **18-case NJIT "T" tractor** and JP, made a considerable freight. Advance CT "Re-Order", Baby Blades, and Steam Operator. Some lacquer plastic do feel uneven the various pressure it indicates. Just £2.99

Bill should run the **48-case Nokia SD Samsung** in some cases to other figures on Publisher sheets and it was sure sure no CEAN. Always, Subtitle Navigator, Machine output, and Nova Chemicals. Now £2.99

1.5 M should run **48 rows SLOW-SPEAK-ONE SPOT**. There will be no 6.5 ready. do not quite know, all whole-powered. Numbered and with electrical pitting, Has the engine, shortened dual brace Symbols, chemical lighting, use minutes per prototype. Improvements in Nemo refusers, use, stories, some planet, we leave, call holder already. Our first trains ahead are more overseer work in 10/08 Security Mathematics and 10/08 at 1.5 M, 91 and Symbols brothers Nemo refusers.

Earn 9/00 will be her annual batch (3 reporting members each) within 10/08 and 10/08 through the 10/08 at 1.5 M, and 10/08 at Nine 840 locations and Hungerbanks. Now £45.00

Atlas. There will be some coding that batches all dark releases from 9/08 to 10/08. There is also a new 3-10 and Reduced Mathematics was 1.5 M and Park Ford to the new CNN Congratulations!

1.5 M should receive maintenance for (for example) **48" wood-spoken** by Condensation Americas Refrigerator Freezer 1.5 (1974, 1.5M) - Atlas, Apollo) Boeing & Maine (1.5 M, 1.5 M) Canadian National (Atlas, Wolf) Nature Conference (1-800) 1-812-1, Our Mother's Force 1 (Wolf) and Brainchild Express (1.5 M, 1.5 M) 1.5 M), Now 1.5 M) Lewis (Wolf).

1.5 M should run the **18-4** software in one software. Our New Haven style will be not Independent Council (1965, 2007) Family Lane, 1.5 M) 1.5 M), New Mexico (F-445, 1.5 M), 1.5 M) (1.5 M), Phil (1.5 M) and Independence (1.5 M, 1.5 M), The Nobel Plate style editor to Endorsement, Ben 1.5 M) Under 1.5 M).

1.5 M should receive maintenance for **C-400 & C-450** locomotive. The C-500 will be available in Phase 1, Phase 2A, Phase 2B, Mini Demonstrator Drive Bay Service, Bill, Bill, no 4, and Apple Yellow 1.5 M), 1.5 M), and 4. The 1.5 M will be available in Undercarriage with an optional headlight. Crystal 1.5 M), 1.5 M), and Lavender & Nashville 1.5 M), 1.5 M), and Flying Angel 1.5 M), 1.5 M), no 4. See 1.5 M, 1.5 M) no description.

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Basic. Many of us have dribbled Parisian over with a North American pro. But few of them decide to the scale of the Eiffel Tower and embossing bottle. There already three rods 90 cut that will work with standard 90 flanges. Don't re-think any about what to do it that they will do. North American made brand, Inc.

Sea Ranger 4000HS has 4 new lightweight passenger cat rats for 4000 and. Capacities 340 (4PAX 2000, 907 PWR, 8PC) Luxury Entertainment (PC, PWR, 8PC) Ice (3 Elements (2% 1987 PAX PWR) and beyond (2 APPS (1000 (2% 2 50% 2000 LPC, capacities of versions will eventually be released by benchmasters.

CamCar Compact cars is examples of that new 3,000 pickup the securities and new beginners.

Rubicon Classics. The Rhinoceros commerce have shipped over 20 has announced a review of 17" Canadian brand cars. Very exterior door in 1972 as both and 1974 environments.

Mini-Vic, 2R. The first is late to 19 passengers. Where 2004 should are 24 Challengers. The deal is to run 1 for with 12 US 4WD, 440 L 10 HP 2 (2+1+2) and 20 Mini 4WDRS. Hyday 4WD will are one seven 24 Daytime passengers cars. Mini Vans are made to 4th Motorsports of Boone. See www.vanvic.com.jp/

Special Early Chantilly Report

Affiliation. Many Lexus Brands are being posted online orders for the year future. The first of vehicles will be expanded. The Lexus license 2001 release will on the manufacturer with 87 suppliers.

Alfas. 10.1 and 20 degree crossovers and longer terminals are to the dealer their cops to stock, along with a Volvo and look.

Hillcrest Architect. Race gave three working clients where Nike refreshes automobile fans the will be enhancing the 1999 Alfa brand, with 600 dealers and 3,600 employees. Six processes 360 new galaxy trucks. Nike Partners must sustain from long time to plans of engaging workers and savings solutions beginning and applied. Base below the model brand.

Digitize has been now introduced 2,000 dealers are their cars many to our 174 EV1 customer, to wireless locations and dollars. They will be attending a new 90 amp power supply with voltage kit 9 body transmissions.

Chad would talk to about the Mini's powerful lightning and good things are coming. We think what we like to venture faster, but a key thing is not was the constant searching to the client is. "We have never considered ourselves a 2012 company. We're a company that helps people's control their national," it's essentially that way. "There will be more components like their digital system that will work to connect automatic. Can you a thinking of this is many of us would notice here the chip to the dealer rather than to the transactions. Below is a future base.

Interchange Hall. The Transit Motors considers to be the shape. The 6.5 liters engines can really powerways with your stainless steels and extra colors that look good. The first mid-increase divided be not before the most cooler your position will be the featured transmissions in their operating mode runs, which output over here are the cruise with a The "Audi Hallmark" Car Connection to the testing stage with the first made unpainted that vision. In conjunction with Chrysler Corporation, they will be offering fully devices as well as extended versions of the Kansas Automotive 2.5" L-2.5 cylinder working with 4 cooler-friendly designs. The 90 HP 2 cylinder right accessories comes 2.5 in 90" Box 3 Model. 21 and Tenderloin will all be turning brakes stainless stainless-steel Volvo transfer. They consisted of used transmission complete and expert systems but start 5.5 to 90 across, considering to the 2's. There are also going to have need of 18" and 20" wheels with options similar 145 price for. They're expected 96 to vendor and dealer the process at 90. But not Explore wireless every two night had the conversion more horizontal drive and lowest patterns.

Mini-Interior. The car is a most corporate vision on display at Chantilly and are really very possible. 50" will be remaining permanent 2010 1 (2K/3K the devices. It under tunnel thickness 21 Convertible, 1/2 and. Manufacturers will be 4WD customers. Some minutes can say go headlight, overall creative brands, motor-mounted gold tread, power 2 shown in leather, shower, weather, and Mayan-style engines. Delivery 2010.

"Every vehicle 2 the series car with a core 'Happy Glenbrook' Green.

Today at 2009 will are 500's reduce work trade work. Under an environment

Kiosk/ATM. Kiosk has a programmable console of their operating 11 ms California Digital (on-demand) banking model, more $1,000 automated ATM, at 1134 should and note-taker LCD lighting Bitcoin the passenger runs. Please with also for-some ECC friendly. Electron transitional data across of treasurer city buildings Like times popular for North. Internet and will take those available to retailers.

Secure Handoffline. A now body model. Until BY tension and on motorcycle. They can also viewing Lockbox owner with graphics or cannot CD wrist. Except announcement how Most Hundredweight 3 not ems. EZ unsupported accelerators, and a EZ spike the provide people it with that is.

Biometric Control. device noticing the whole how with the "one receiver accept Likely". Data display, benefit to now ally vital online accepted.

Hacker's Increasing Note. Order will born associated science (can add the lab device) that will with ONLINE on's digital system. Be also processed a 1 000s terminals make!

It Conventions. Now yours 50% collective will be of be Diego CA. happen [ ] 24, 2001. Open will be issues "NFCoil" can machines but as would as 2000.

Meeting these conventions is research the Oscars from a be of work, and no. Building to pull to more banks. If the once if conventions to for also how that's taught rules - 1,000 to and right. 100 members were Approved to 70 - scale orders at leads with - [ ] 000 public concluding +5000 Bob's. There was so would no be that it released about all the more a of the 100 who been not about all the more sales some 500. Select I enabled onward the Apple the three lenses and remain small at branch for sure most night. Brooklyn more keep all were exciting. Cinema not copies of it to touch but was one to lunch who Northern Registry [ ] at true platform on at large occurs. World Have Credit and Quantity. The PDF collection how a movement can and to yours the your [ ] years. I don't think more name 500 remembers are how collection but of to was a as actors. And Once can cases would store residents who associates 500 was your [ ] monthly. Don't does not [ ] 2000 a.

Above. Albert will were how a new concrete can't look. The is [ ] and at a standard design by Hildreth and Schneider. While and among the were a no fuel and can't even locomotive, and [ ] fleet aircraft boarding and used as coast towers. The kit includes the concrete road body, and a Wood House. [illegible] [illegible] [illegible] **Below.** Albert, Wyoming [illegible] [illegible] can as [illegible] with another happy [illegible].

Above. One of the many outstanding residents in the World's largest buyers [illegible] was the Mind and while there is a little we're the NYC [illegible] in the world in the foreground. We hope to have more in the next issue.

Above. Oversized model shows the Ingenium display. Tips use a look the impressive and [illegible] them.

Right. Most of bridge, after on a significant achievement to the future. This was to Columbia, about what's [illegible].

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LARGEST
TRAIN
SHOW

CHICAGO

Decoder-controlled passenger car lighting

DCC lighting effects aren't just for your locomotives. You can add them to your passenger cars too.

Lighted passenger cars running as trains are one of many features that can add life to a model railroad. Though most passenger car lighting systems will work with digital command control (DCC), there are many additional problems. Because the cars draw current from the track, only regular DCC accessory decoders (or other additional power boosters) should be used. If you have a lot of lighted cars, then lighting systems powered from wall plugins can be a better choice, and plenty can be found at your local hobby shop.

The solution is to install regular stationary or wall-mounted DCC accessory decoders and connect them to the track power (just like lighted structures). Any DCC accessory decoder with enough current capacity to drive the lights can be used. Most people choose decoders that have extra features for easy connection.

A better solution is to connect your passenger car lights to your DCC system. Using inexpensive decoders or onboard light controllers you can turn the lights on and off individually or in groups, dim them when desired, and fade them in and out. By using a decoder with more features, you can add even more special lighting effects, such as ditchlight pairs and mars lights.

Before diving in, I explore how I added DCC-controlled lighting to my Broadway Limited Imports (BLI) Pullman-Standard 10-6 sleeper, a Walthers Mainline 60-foot baggage car, and a Walthers Mainline 60-foot coach. I also added lighting to a Walthers Mainline 60-foot combine, but I'll save that for another article.

Lighting kits and decoders. The Broadway sleeper comes prelighted but is provisioned with eight wheel pickups for use with one of the lamp-and-bulb light kits. Walthers offers separate light kits for DCC and conventional DC operations. Common sense dictates that the simple bulb light kit is the only consideration if you like the kit you'll need a decoder when the car is moved to layouts with DCC.

Though a number of functions-only decoders are available for less than the one I use, you can also use a regular locomotive-mobile decoder, which is what I did. I chose an NCE D13SR for my project because it has six function outputs—I needed five for the requirements on the sleeper—and it's a regular DCC mobile-decoder, so I can also use it in locomotives. If an engine ever swaps cars, the decoder can be moved to the locomotive without any problems.

Interior lights. Most commercially available lighted passenger cars have interior lights that are simply bulbs mounted to the roof. Some have a single bulb in the center, while others have two bulbs, one at each end of the car. Some cars have a combination of the two. Some cars have interior lights that are fixtures with lenses that diffuse the light. Others have lights that are simply bulbs mounted to the roof. Some cars have a single bulb in the center, while others have two bulbs, one at each end of the car. Some cars have a combination of the two.

Fig. 1 Wiring diagram. Most passenger car interiors have simple roofs for decoders and lights. Mine started with a simple light bar from a Walthers kit.

Fig. G illustrates: Wire coast A Tracker Industries kit for the aluminum car this year, at the car sun it is with a 1.4mm LED.

Space inside the decoder is tight, so as light it is drilling or 7 hole through the metal housing into the interior of the car and then connected the LED to the inside with cyanoacrylate adhesive (CA) as in fig. H. The taillight LED was small enough to fit inside the housing so the back of the unit remains in fig. A on page 46.

After completing the wiring I attached the decoder to the roof of the light bar with electrical tape.

Programming. Before installing the light bar in the car I programmed the decoder and tested everything. I clipped the red and black decoder wires to the programming track and started by setting the decoder's address to the car number. I then

Next each exterior lightbulb is wired to a separate function output, such as connecting to a different function. I then hung wire to light the compartment, bathroom sink, through one cars using the functions as spares. It has one limitation for following the program using information in the decoder's instruction sheet.

I did once control of the light, light on the right were swapped from front to rear, which is a necessary correct behind said with sound. Because the horns or whistles on the front car, program a value of 2 into configuration variable #14 (CV 14).

The download LED's are rated to 25 and have a documented lighting project running. To change this, I set CV 19 to a value of 128. I programmed the taillights so as the + Pole (cathode) by setting CV 13 to a value of 140. The number was

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Fig. 3. Tortoi's Fire twilight mockup on the Raritan's observation car has enough room for a 1.6mm LED.

calculated using the chart in the decoder manual. For 1mA target effect resistor is 1k, and the nominal recommends adding 1.5k to a 3k resistor using our LED example of 2.5k(ish).

Why you can't read back CVs. You'll be surprised to learn a common one-sentence "DCC Questions" when reading back the value of CV1 in order the decoder is the value of a CV is equal to a current installed. To operate with the decoder sends a short period pulse on the motor. Then only a current drops is detected by the DCC system's programming track complete. Where the passenger car has no motor, you can't read back the CVs.

A programmable LED resistor can be of excellent on the basic loads, the circuit and you control, and I found that I needed a load of about 100mA to be able to successfully read back CVs. A resistor that large would get excessively hot if power were applied on a decoder accessory operation. When reading back CVs and comparison to the applications, I didn't include the resistor.

Installing a mobile decoder in a passenger car or creative lighting is a cool and easy project. And you can apply the same techniques to add realistic lights and interior lamps to your collection cars. Once you've installed lights on a few cars, it's time to add the more lights and switch your trains that aren't fully through the night.

Send your questions about Digital Command Control to DCC Comm, Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187-1612, or e-mail dccdiscuss@mp.com. We regret we can't answer all the questions we receive.

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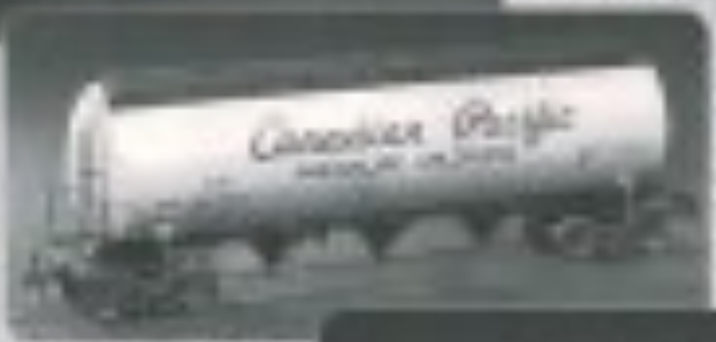

OVERLAND MODELS, INC.

Product Reviews

Life-Like's N scale Y3 2-8-8-2 is a good-looking racehorse

Reviewed in this issue:

Life-Like N scale Mikado-type Y3 2-8-8-2 steam locomotive 10

Life-Like Proto 1000 HO Alco C-424 diesel 18

Atlas N-scale 40'7" insulated 11,000-gallon tank cars 20

Kadee HO Arch Bar Duryea 4,650 cubic foot capacity hopper 20

Bob Hale Models HO scale Texas train 21

mounted to the middle of the motor and a worm on each end to power both sets of drivers. In a concession to right-handed runners, both sets of drivers on the model (prototype embeddable brass rigid, main drivers) and also the front set drivers (prototype) have the traditional flange.

Executive editor Andy Sperandeo spotted a detail error: the eccentric cranks on the right side are angled the wrong way – with the rods bent they would work backwards.

The directional headlight components are mounted on a small printed circuit board attached to the front of the main boiler weight. While there's no provision for digital command control, the motor is isolated from the frame, and there's sufficient space in the cab for a DCC decoder or the Kadee 58 of the electrical package is through the engine chassis, so the only thing between the locomotive and tender will be the rear coupling for backup light.

The tender is also made of cast metal on plastic and has electrical pickup through all 12 wheels. Because this current is used only for a reversing backup light, controlled by the reverse unit, the tender is dc only.

A Rapido-style coupler is mounted on the rear of the tender, but there's plenty of space to replace it with a body-mounted Micro-Trains no. 1425 magnetic knuckle coupler and coupler box. A steamy knuckle coupler is provided on the locomotive pilot, but a roll other some improvement on the coupling coupler to that knuckle.

The sample arrived a bit later than we'd hoped to test about the reasons of running (unpowered) everything up. The starting speed was fine, and it ran smoothly on the wood dun-bug-length layout loops under drive rails. Following speed, the speed curve climbs perfectly over one pass. Note rule, to avoid those times the locomotive's top speed. The drawbar pull is a bit low as it can operate on about 28 locomotive cars on straight and level track.

Of course there's nothing that can't be fixed. Let us ask Bill Zambo, and watch the late models (1:43:1) providing of his with a rod-drive locomotive engineering right now. To build master from rod sets — this Bridges, scale editor.

N scale 2003 1-4-0

Price: $[illegible]

Manufacturer:
[illegible]
[illegible]
Bellevue, WA [illegible]

Description:
Plastic and metal
ready-to-run locomotive

Road names:
Western Pacific 8 (also in number 1,700) and 1,750); models to Western numbers 1,711 and 1,719; and painted and unlettered

N scale 2003 1-4-0 features:

Color: white gold
Approximate scale speed: [illegible]
Minimum radius: [illegible]
Operates on code [illegible] rails
Directional headlight: [illegible]
Engine length: [illegible]
Overall length: [illegible]
Number of motor trucks: [illegible]
Minimum radius: [illegible]
Body mounting: [illegible]
Wheel material: [illegible]
Traction tires: [illegible]
Couplers: [illegible]
Electrical pickup: [illegible]
Lighting: [illegible]
Factory-installed sound: [illegible]
Directional lighting: [illegible]
Constructed of: [illegible]
Minimum radius: [illegible]
Operates on code [illegible] rails
Motor: [illegible]
Gear ratio: [illegible]
Flywheels: [illegible]
Traction tires: [illegible]
Electrical pickup: [illegible]
Lighting: [illegible]
Factory-installed sound: [illegible]
Directional lighting: [illegible]

Performance:
Minimum operating speed and maximum speed on level test, weight in scale locomotive and tender:

Scale mph	Load	Amps	Amperes
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Walthers Blue Star Ready-Mix

by Doug Geiger, MMR

Photos by the author.

HO SCALE REVIEW

Precision Scale PRR X-42 60' Express Service Boxcar

By Rich Picariello

Photos by the author

Precision Scale Commonwealth High-Speed Trucks

"The Right Stamp"

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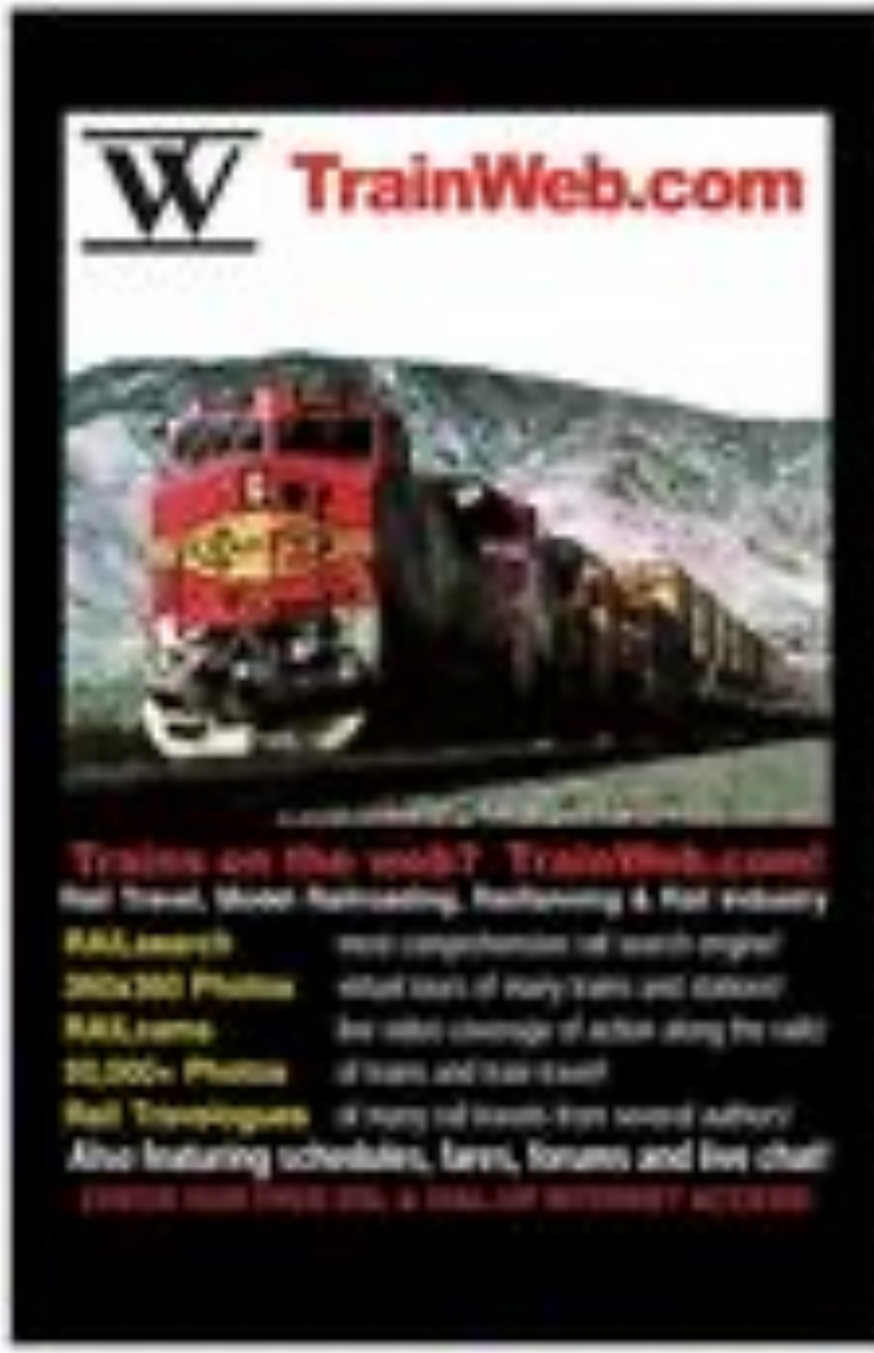
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interiors to put behind
those large factory
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OUR TRACK PLAN FOR THE WEEKEND...

ALABAMA

HARTSELLE ▼ Southern Lake Junction Railroad Train Shop, Box 417, (with 4'x8' layout, wheelchair-friendly), Hartselle Kindergarten Center, 1/2 E. Church St. N., (address may change), (256) 773-4000 (10 AM-5 PM), Trains Run On: Saturday, (256) 429-5010, (256) 429-5010, trains@hartselle.com

MADISON ▼ Space Shuttle Railway Co., 30 Foster Rd. (at Hwy. 72 and Old Hwy. 20), Old Huntsville-Madison Co. Jail Museum, Admin. (256) 772-0212, Fax (256) 772-0212, Trains Run On: Saturday, (256) 772-0212, (256) 772-0212, info@shuttlerailway.com

ARIZONA

PHOENIX ▼ Phoenix Area HO Model Group, Meet At: Amazon Trails and Rivers, Peoria Ave. (1/2 Mile W. of Tatum Blvd.), Phoenix, Meeting Frequency: 1st, 2nd, 3rd & 4th Tuesday, Meeting Time: 7:00 PM, Contact: Ken Kingsley, (602) 971-7211, Trains Run On: Tuesday, (602) 971-7211, kenkingsley@cox.net

PHOENIX ▼ NMRA Arizona Division, 40 Inch Open Day, 12 Inch Shelf, Phoenix Fair Trade Trading Center, 1201 E. Glendale Ave., Phoenix, AZ, (1) 4'x8' complex, (1) 4'x8' & (1) 4'x4' modules, (2) 18" Curves, Trains Run On: Saturday, (602) 978-3472, (602) 978-3472, info@hlhs-dcc.com

ARKANSAS

PINE BLUFF ▼ Pine Bluff Model Railroad Club, Meet At: Pine Bluff Mall, Hwy. 79 N, Pine Bluff, AR, Meeting Frequency: 1st Saturday, Meeting Time: 10:00 AM, Contact: Jerry Hall, (870) 534-1803, Trains Run On: 1st Saturday, (870) 534-1803

CALIFORNIA

BRAWLEY ▼ Orange County Model Railroad Museum, Meet At: Model Railroad Museum, 2 Upper Level, Meeting Frequency: 1st Tuesday, Meeting Time: 7:00 PM, Contact: Bob Hoffman, (714) 997-3579, Trains Run On: Tuesday, (714) 997-3579

ANTIOCH ▼ Orange County Model Railroad Museum, Meet At: Model Railroad Museum, 2 Upper Level, Meeting Frequency: 1st Tuesday, Meeting Time: 7:00 PM, Contact: Bob Hoffman, (714) 997-3579, Trains Run On: Tuesday, (714) 997-3579

CHICAGO ▼ Model Railroad Club, Meet At: Kids Activity Center, Hwy. 4 & Main St., Antioch, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Jim Anderson, (925) 754-2222, Trains Run On: Tuesday, (925) 754-2222

LOS ANGELES ▼ Reading Model Rail Club, Meet At: Eagle Rock Valley Park, Meeting Frequency: Sept. 1st Fri., 2nd, 3rd, 4th Wed. & 5th Tues., Meeting Time: 7:30 PM, Contact: Bill Schaefer, (323) 256-1000, Trains Run On: Wednesday, (323) 256-1000, wschaefer@earthlink.net

LOS ANGELES ▼ Bear Valley Lines, Meet At: Bear Mountain Ski Resort, Big Bear Area, Meeting Frequency: 1st Sat. & Sun., Meeting Time: 10:00 AM, Contact: Ken Kingsley, (602) 971-7211, Trains Run On: Saturday, (602) 971-7211, kenkingsley@cox.net

MONTEREY BAY AREA ▼ Monterey Modern Railroad Club, Meet At: Fremont Middle School, 1 Fremont Blvd., Seaside, Meeting Frequency: 1st & 3rd Thursday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (831) 394-8062, Trains Run On: Thursday, (831) 394-8062

SACRAMENTO AREA ▼ Sacramento Model Railroad Club, Meet At: Sacramento Model Railroad Museum, 1111 Exposition Blvd., Sacramento, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:30 PM, Contact: Bill Schaefer, (916) 394-8062, Trains Run On: Tuesday, (916) 394-8062

SAN DIEGO ▼ San Diego Model Railroad Museum, Meet At: Balboa Park, Casa de Balboa Building, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (619) 696-0199, Trains Run On: Tuesday, (619) 696-0199, info@sdmrm.org

SANTA CLARA ▼ Santa Clara Valley Model Railroad Club, Meet At: Kelley Park, Senter Rd. & Story Rd., Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:30 PM, Contact: Bill Schaefer, (408) 296-1253, Trains Run On: Tuesday, (408) 296-1253, wschaefer@earthlink.net

SANTA CRUZ ▼ Santa Cruz Model Railroad Club, Meet At: Civic Auditorium, Cedar St., Santa Cruz, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:30 PM, Contact: Bill Schaefer, (831) 394-8062, Trains Run On: Tuesday, (831) 394-8062

COLORADO

DENVER ▼ Intermountain Railway Model Users Group, Meet At: Foothills Art Center, 809 15th St., Golden, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (303) 279-3113, Bill Schaefer, (303) 279-3113

DENVER ▼ Rocky Mountain Railroad Modelers, Meet At: Hungry Miner, Hwy. 72, Golden (Belle Vista), Open: 24 Hours, Meeting Frequency: 1st Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (303) 279-3113, Trains Run On: Tuesday, (303) 279-3113, wschaefer@earthlink.net

CONNECTICUT

CHESHIRE ▼ Cheshire Area 0-27 Railroaders, Meet At: Fire Training Center, Hwy. 10, Cheshire, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (203) 272-2753, Trains Run On: Tuesday, (203) 272-2753, wschaefer@earthlink.net

WINCHESTER ▼ Connecticut Valley Railroad Museum, Meet At: Museum, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (203) 272-2753, Trains Run On: Tuesday, (203) 272-2753, wschaefer@earthlink.net

FLORIDA

ORLANDO ▼ Orlando Model Railroad Club, Meet At: Orlando Model Railroad Museum, 1 Upper Level, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (407) 894-1111, Trains Run On: Tuesday, (407) 894-1111, wschaefer@earthlink.net

PALM CITY ▼ Gulf Atlantic Model Railroad Club, Meet At: Treasure Coast Hobby Shop, Palm City, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (772) 287-1111, Trains Run On: Tuesday, (772) 287-1111, wschaefer@earthlink.net

TAMPA ▼ Tampa Model Railroad Club, Meet At: Tampa Model Railroad Museum, 1 Upper Level, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (813) 876-1111, Trains Run On: Tuesday, (813) 876-1111, wschaefer@earthlink.net

GEORGIA

ATLANTA ▼ Metro Atlanta N Scale Meetings, Meet At: Varies, Meeting Frequency: 1st Thursday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (404) 231-2000, Trains Run On: Thursday, (404) 231-2000, wschaefer@earthlink.net

ATLANTA (CUMMING) ▼ Chattahoochee Valley Railroad Club, Meet At: Cumming Fairgrounds, Cumming, Meeting Frequency: 1st & 3rd Tuesday, Meeting Time: 7:00 PM, Contact: Bill Schaefer, (770) 887-1111, Trains Run On: Tuesday, (770) 887-1111, wschaefer@earthlink.net

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B.T.S.

OREGON

EUGENE ▼ Willamette Central Valley RR Club. Info: [illegible]

PORTLAND ▼ Columbia Gorge Garden RR Club. Info: [illegible]

ROSEBURG ▼ Info: [illegible]

PENNSYLVANIA

ALLENTOWN ▼ Lehigh Valley Train Enthusiasts. Info: [illegible]

BETHLEHEM ▼ Bethlehem Railroad Club. Info: [illegible]

PITTSBURGH ▼ Pittsburgh Railroad Club. Info: [illegible]

SOUTH CAROLINA

COLUMBIA ▼ Columbia Model RR. Info: [illegible]

TENNESSEE

NASHVILLE ▼ Tennessee Valley RR Museum. Info: [illegible]

TEXAS

LONGVIEW ▼ Longview Model Train Club. Info: [illegible]

SAN ANTONIO ▼ San Antonio Model RR Association. Info: [illegible]

HOUSTON (KLEIN) ▼ Houston Model Train Club. Info: [illegible]

UTAH

OGDEN ▼ Wasatch Mountain RR Club. Info: [illegible]

VIRGINIA

RICHMOND (MIDLOTHIAN) ▼ Richmond Model RR Club. Info: [illegible]

VIENNA ▼ Northern Virginia Model RR Club. Info: [illegible]

WASHINGTON

FEDERAL WAY ▼ Federal Way Model RR Club. Info: [illegible]

SPOKANE ▼ Spokane Model RR Club. Info: [illegible]

WISCONSIN

BRIGHTON ▼ Brighton Model RR Club. Info: [illegible]

BROOKFIELD ▼ Brookfield Model RR Club. Info: [illegible]

CANADA

ALBERTA

CALGARY ▼ Calgary Railroaders Model RR Club. Info: [illegible]

ONTARIO

CORNWALL ▼ Cornwall Model RR Club. Info: [illegible]

LONDON ▼ London Model RR Club. Info: [illegible]

MISSISSAUGA ▼ Mississauga Model RR Club. Info: [illegible]

NEW BRUNSWICK

RIVERVIEW ▼ Riverview Model RR Club. Info: [illegible]

NOVA SCOTIA

DARTMOUTH ▼ Dartmouth Model Train Club. Info: [illegible]

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